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Certain mounds of Arkansas and of Mississippi

Clarence Bloomfield Moore

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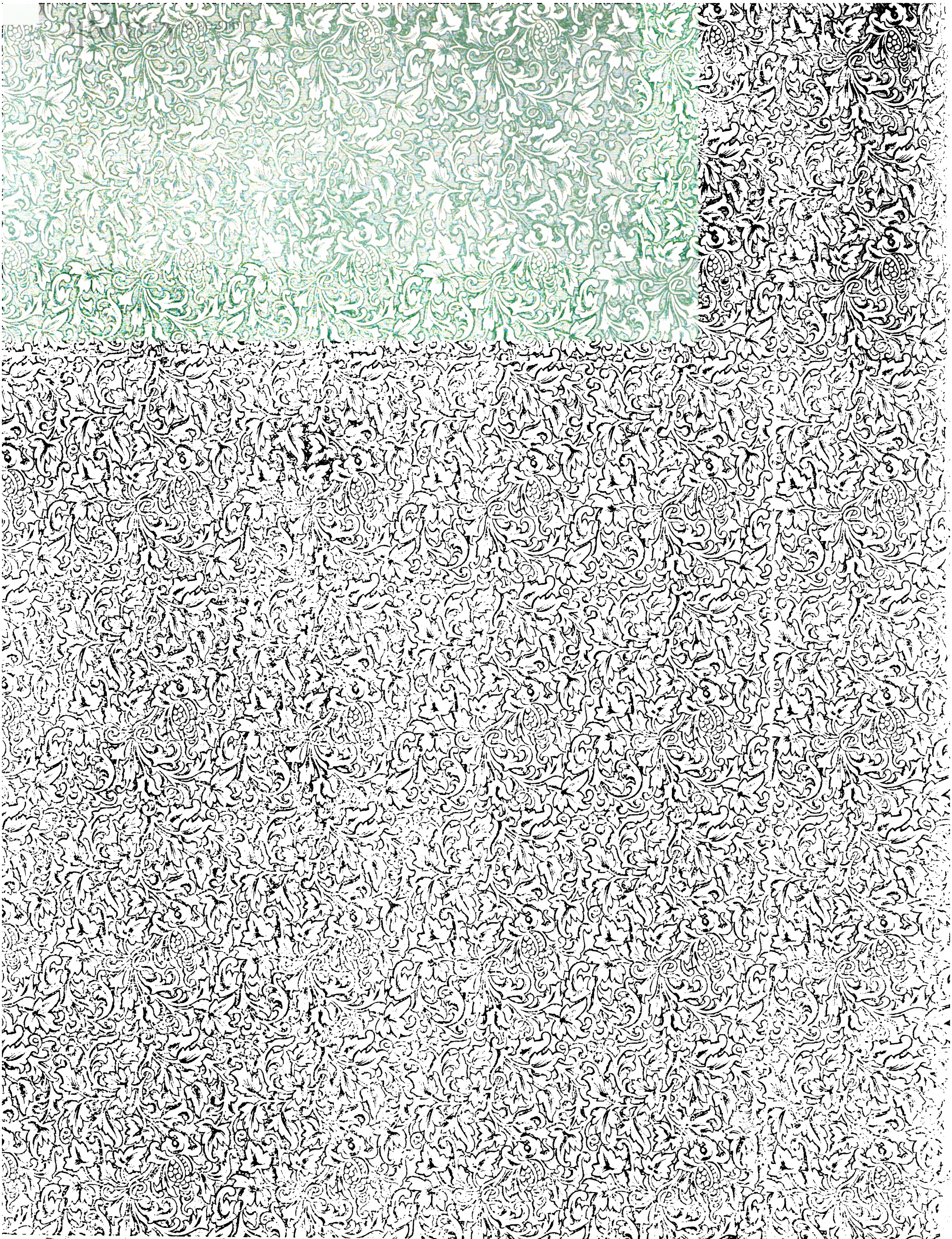

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Certain Mounds of Arkansas and of Mississippi

Part I

Mounds and Cemeteries of the Lower Arkansas River

Part II

Mounds of the Lower Yazoo and Lower Sunflower Rivers, Mississippi

Part III

The Blum Mounds, Mississippi

BY

CLARENCE B. MOORE.

Reprint from the Journal of the Academy of Natural Sciences of Philadelphia, Volume XIII

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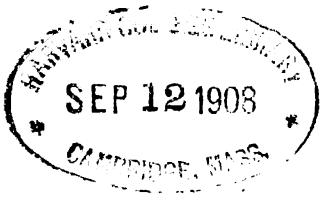

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By Clarence B. Moore.

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PART I

MOUNDS AND CEMETERIES OF THE LOWER ARKANSAS RIVER

BY

CLARENCE B. MOORE.

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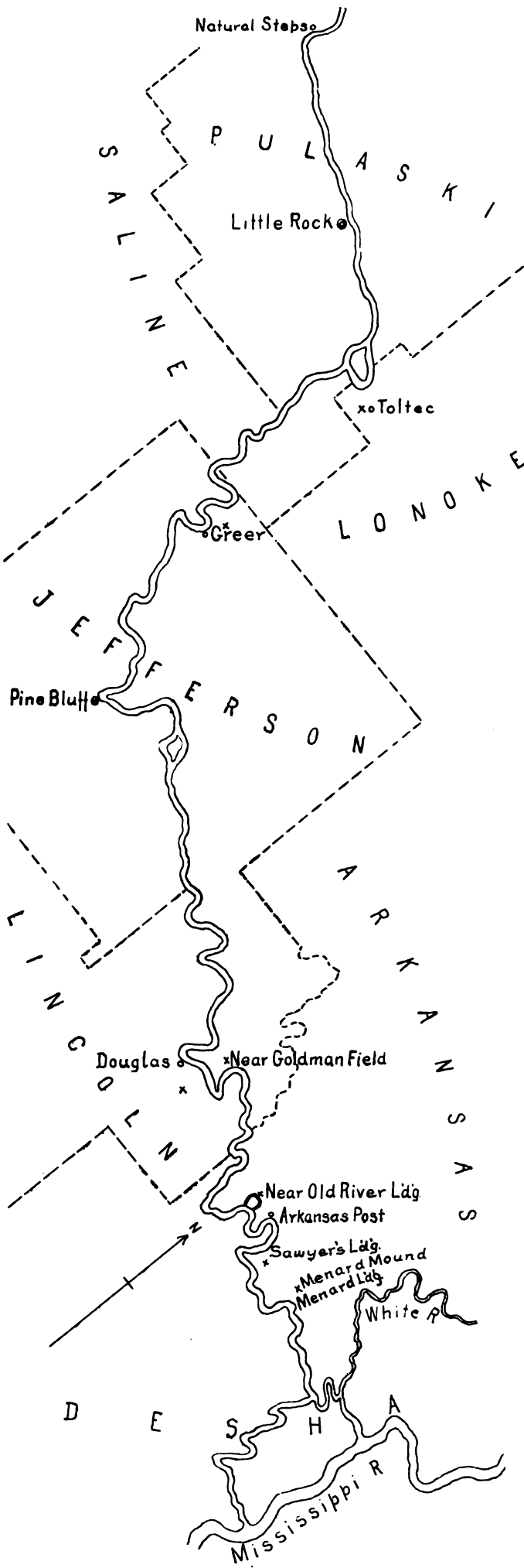

MAP OF LOWER PART OF THE ARKANSAS RIVER

Scale in miles

1908

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CERTAIN MOUNDS OF ARKANSAS AND OF MISSISSIPPI.

By Clarence B. Moore.

PART I.

Mounds and Cemeteries of the Lower Arkansas River.

When it became evident that our quest on the Yazoo and Sunflower rivers in the State of Mississippi (described in the latter part of this report), was not destined to succeed, we turned to the Arkansas river.

This river we investigated as far up as Natural Steps, twenty miles above the city of Little Rock, Arkansas, a distance of 194 miles by water, according to the Government survey. This survey, however, was made long ago, and the river in recent years, by cutting its way across bends, has shortened its course; therefore, the distance gone over by us was considerably less than the figures given.

The time spent on this work, in our flat-bottomed steamer, with thirteen men to dig and four to supervise, was fifty-six[1] days, including parts of February and April, and all of March, 1908.

Our custom to send agents in advance to find the exact locations of mounds, had not been followed in the case of those on the Arkansas river.

With the exception of the Menard mound, and the so-called Toltec group below Little Rock, the mounds on the Arkansas river between its mouth and Natural Steps (that part of the river with which this report has to do), are insignificant in number and in size; while aboriginal cemeteries, as to the location of which a clue could be had, were far from numerous. The river is constantly changing its course, and many mounds and cemeteries, no doubt, have been swept away in the past or have been left far inland.

When Marquette,[2] the first of the French explorers of this region, visited the aborigines not far from the Arkansas River, in 1673, he found them cooking Indian corn "in large earthen pots very curiously made." "They have also," we are

[1] Including four days on the White and LaGrue Rivers.

[2] B. F. French, Historical Collections of Louisiana, Part II, p. 295. To those who have not access to the original French in Margry's "*Découvertes*," the "Historical Collections of Louisiana," edited by B. F. French, will be of interest. The five parts appeared, respectively, in 1846, 1850, 1851, 1852, 1853. The reader, however, must bear in mind that the "Collections" contain misprints and mistranslations, and that incorporated in Part I is the fictitious account by Father Hennepin of a journey by him down the Mississippi to the Gulf, which journey the mendacious friar never accomplished.

A second series edited by B. F. French, "Historical Collections of Louisiana and Florida," two volumes, one published in 1869, one in 1875, complete these "Collections."

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told, "large baked earthen plates, which they use for different purposes. The men go naked and wear their hair short. They pierce their noses and ears, and wear rings of glass [1] beads in them."

At nearly every site investigated by us were found beads of glass and objects of brass—sure signs, as the reader is aware, of contact between the aborigines and white men.

Human remains found by us along the Arkansas river were usually so badly decayed as to be worthless for scientific investigation.

A number of skulls, however, were preserved and were sent by us to the United States National Museum at Washington, D. C.

Dr. Aleš Hrdlička has kindly sent us an interesting and complete report on these skulls, which follows this portion (Part I) of our description of the season's work.

At one place, Greer, certain evidence [2] was found by us of the presence of a specific disease which affects the bones, this evidence being strongly marked in the case of a single skeleton, many of whose principal bones were seriously involved.

We attach but little importance to this discovery of diseased bones, however, inasmuch as Greer cannot, with reasonable certainty, be classed as a pre-Columbian site. It is true that no European artifacts, such as glass, brass, iron or lead, were found there by us; and that the copper beads (present with one burial only) have been shown by the analysis of Dr. H. F. Keller to be pure native copper with only a trace of iron, hence far purer than any product from the smelted sulphide ores of Europe could have been in early times, or indeed could be at the present time.

Still, as almost nothing except pottery (which does not determine their period) had been placed with the burials at Greer; and as the native copper beads, found in but a single instance, cannot be regarded as more than an indication; and as all other sites of importance investigated by us on the Arkansas river were, as we have said, distinctly post-Columbian, the question of contact between Europeans and the makers of the cemetery at Greer must be considered an open one.

In the way of artifacts, but little save earthenware lay with the dead in the graves along the lower Arkansas, the aboriginal mourners, seemingly, having considered their duty fully performed by depositing pottery alone.

Vessels were not always present with the dead, though in the great majority of cases they were so found, sometimes singly, often in pairs (usually a bottle and a bowl); occasionally in greater number, ten in one instance having been found with a single burial. The smallest vessels usually accompanied the remains of children.

[1] In another translation of Marquette's narrative the word "glass" is omitted, the statement being that the natives wear beads hanging from their noses and ears (Hist. Coll. of La., Part IV, page 48). In the original French the word *rassade* is used. This word is defined as "beads of glass or of enamel" by Littré; and practically the same definition is given by the Dictionary of the French Academy. *Nouveau Larousse Illustré* gives *rassade* as meaning glassware for trading purposes. Nevertheless it is just possible that Marquette, though lately from Canada where glass beads on Indians must have been a familiar sight, may have used the word *rassade* in describing beads of shell or the pierced pearls often worn by aborigines. The Arkansas and the White rivers are today famous for their yield of pearls.

[2] As attested by the United States Army Medical Museum where the bones now are.

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As a rule, vessels lay near the skulls; and even in bunched burials, the vicinity of a skull was often selected as the place of deposit. This rule, however, had many exceptions, and in some sites vessels were found at almost every part of the skeleton, as may be seen in the detailed accounts of our investigation, which are to follow.

As we have already said, practically all the cemeteries investigated by us on the lower Arkansas river extended into the post-Columbian period, a fact, however, which had little to do with the earthenware of the cemeteries, as has been well expressed by Professor Holmes.

"There is but little evidence of the influence of the art of the whites," he says,[1] "upon the ceramic products of this province, although the forms are sometimes thought to be suggestive of European models. It is certain, however, that the art had reached its highest stage without the aid of civilized hands, and in the study of its many interesting features we can feel assured that we are dealing with purely aboriginal types."

The earthenware of the lower Arkansas river, in common with that of all the middle Mississippi region, was not "killed" by breaking a hole in the base or by making one there prior to the firing of the clay; nor was it broken ceremonially before inhumation.

The ware, shell-tempered, is not, in our opinion, equal to the best we have found elsewhere (notably at Moundville, Ala., and along the northwestern Florida coast), being less thin, less evenly fired, and often having the tempering material irregularly distributed, as if by imperfect kneading of the clay.

The dark ware with a highly polished coating, which sometimes is found in Mississippi and in Alabama, is scarcely met with along the lower Arkansas.

However, although the ware as a whole is, as we have said, inferior to that sometimes found elsewhere, we nevertheless encountered in our investigation a number of well-tempered, well-fired, and carefully-wrought vessels, which among others, will be particularly described and figured later in this report.

In form, the pot, the bowl, and the bottle greatly predominate, the long-necked bottles, or carafes, being comparatively numerous. We find also the life-form, sometimes in combination with the bottle; and we meet with eccentric forms, occasionally.

An interesting type along the Arkansas river is the "teapot" form of vessel, which has a more-or-less globular body; a circular opening on top, surrounded by a low neck; and a spout and small knob on opposite sides[2] of the body.

[1] W. H. Holmes, "Ancient Pottery of the Mississippi Valley," Fourth Ann. Rep. Bur. Am. Ethnol., p. 371.

In addition to the above-named work we would call attention, in connection with the pottery of the lower Arkansas river, to "Pottery of the Middle Mississippi Valley," in W. H. Holmes' "Aboriginal Pottery of Eastern United States," Twentieth Ann. Rep. Bur. Am. Ethnol.; also "Pottery from Arkansas," by the same author, in Third Ann. Rep. Bur. Am. Ethnol.; Gates P. Thruston, "Antiquities of Tennessee"; Dr. Edward Evers, "Archæology of Missouri, Part I, The Ancient Pottery of Southeastern Missouri"; Charles C. Willoughby, "An Analysis of the Decorations upon Pottery from the Mississippi Valley," Journal of American Folk-Lore, Vol. X, 1897.

[2] Two vessels of this form are figured by Holmes as coming from near the Menard mound, Arkansas river. Third Ann. Rep. Bur. Am. Ethnol., p. 482.

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"The origin of this form of vessel," says Professor Holmes,[1] "is suggested by a fine red piece from 'Mississippi,' now in the National Collection. The knob is the head of a turtle or other full-bodied reptile, and the spout takes the place of the creature's tail. Many of the animal-shaped vases would resemble this form closely if an opening were made through the top of the body and through the tail."

This animal-form "teapot" referred to by Professor Holmes, is figured by him in a later work.[2]

We found on the lower Arkansas twenty-eight of this "teapot" form of vessel, ranging in size between the mere toy but 1.9 inches in height, and the capacious vessel 7.6 inches high; some of dark ware; some of yellow ware having a solid coating of red; others of yellow ware decorated with red and white; and in two instances with red, white and black. There were also two life-forms with spouts. The more noteworthy of these "teapot" vessels will be described in their proper places.

We believe this novel "teapot" type, so far as the United States[3] is concerned, to be peculiar to eastern Arkansas and nearby regions.[4] As we went westward on the river, the type was less often met with, only one being found in the cemetery at Greer. We have seen a few said to have come from near the city of Little Rock. In photographs of two large collections of pottery from Arkansas, west of Little Rock, the "teapot" form appears but once.

A large percentage of the pottery of the Lower Arkansas is undecorated.[5] When decoration is present it consists of the use of pigment, or of designs conferred by a pointed implement, sharp or blunt. In the case of some vessels found in one site, incised decoration with red pigment rubbed into the lines was encountered.

The pigments employed, as Professor Holmes[6] points out, were generally clays, white or tinted with iron oxide. Dr. H. F. Keller has made for us eight determinations and analyses of coloring matter on vessels from the lower Arkansas and of various masses of white and of red material which we found with skeletons, sometimes carefully stored in vessels. The red pigment is oxide of iron; the white pigment is clay. One of the masses of red material "is very intense in color and contains more than sixty per cent. of ferric oxide, the remainder being silica and alumina. This material is undoubtedly red ocher."

[1] Fourth Ann. Rep. Bur. Am. Ethnol., p. 403.

[2] Twentieth Ann. Rep. Bur. Am. Ethnol., Plate XL, b.

[3] Compare vessels with spouts, from Panuco Valley, Mexico. Jesse Walter Fewkes, "Certain Antiquities of Eastern Mexico." Twenty-fifth Ann. Rep. Bur. Am. Ethnol., Plate CXXVII, a, b.

Also compare vessels, with single and double spouts, from Central America. Catalogue of Collection of Señor Arango, Medellin, Colombia.

[4] Holmes describes one as coming from "Mississippi." Fourth Ann. Rep. Bur. Am. Ethnol., p. 403.

See also two "teapot" vessels from Coahoma County, Miss., which county borders the Mississippi river. Charles Peabody, "Exploration of Mounds, Coahoma County, Mississippi," Peabody Museum Papers, Vol. III, No. 2. Plate XIV.

[5] Undecorated vessels, commonplace in shape and so poorly fired that after their long deposit in water-soaked ground, they were hardly more than paste, were sometimes the principal yield from a day's work.

[6] Twentieth Ann. Rep. Bur. Am. Ethnol., p. 86.

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Another mass of red contained a moderate percentage of ferric oxide with quartz and clay, forming a light red. Doubtless admixture of white clay with the red oxide formed the various shades of cream and of pink used in decorating the pottery.

The white masses from the several localities are almost pure kaolin and doubtless are the same as the white material used on the vessels.

The Tarahumare Indians of Mexico use a white earth in the decoration of pottery,[1] and Pueblo Indians of southwestern United States used kaolin on their ware.[2]

The black coloring matter occasionally found on the vessels of the lower Arkansas, seems to be hardly more than a stain, and does not lie on the vessels in a coating as do the ferric oxide and the clay. We have not been able to obtain enough of this material to make an analysis.

The painted decoration, which is almost invariably on yellow or yellow-red ware, offers but little variety. In a majority of cases we find a solid coating of red, sometimes rich in shade and carefully polished.

When designs are attempted, there is great repetition. Of the fifteen bottles found by us on the Arkansas river, decorated in red and white, but four have designs other than almost exactly similar partly-interlocked scrolls; and two of these four have scroll-decoration nearly related to that of the majority of the bottles. The contrast between the monotony of design on the painted vessels of this region and the great variety on those of southwestern United States is marked indeed.

In the case of at least some of the bottles from the lower Arkansas, with decoration of white and of red pigment, it seems as if first of all a slip, or coating, of red had been placed over the entire bottle, and that the white of the painted design had been laid on top of the red. In places, also, to define the design, the red has been scraped away, leaving the yellow of the ware in which, however, traces of the red slip still remain.

The decoration on the dark ware of the lower Arkansas has been conferred, as a rule, by means of a method explained by Professor Holmes, that is, by trailing a broad point along the clay before firing.

The incised design, properly speaking, is rarely found and is seldom other than of inferior execution, while engraved decoration, made with a fine point, is more unusual still. Several excellent examples of these forms were met with by us, however.

Of the trailed decoration we can say, as we have said of the painted designs, that there is great repetition. Some idea of the extent to which this repetition was carried may be gathered from the fact that in one cemetery on the Arkansas we found thirty-two bottles and bowls, all bearing very closely related scroll-designs formed by combinations of trailed, broad lines.

[1] Carl Lumholtz, "Unknown Mexico," Vol. I, p. 243.

[2] Walter Hough, "Archæological Field Work in Northeastern Arizona." Smithsonian Report, 1901, p. 315.

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As most of the ware found by us was broken when discovered, or received injury from the spades of the diggers, it has been necessary to cement the parts together and occasionally to make slight restorations. In this latter event, however, care has been taken to introduce nothing not thoroughly justified by the remainder of the vessel, and to use for restoration a material slightly differing in shade from the color of the ware, that the modern work may not be confused with that of the aboriginal potter.

All reductions in size of vessels, and of all other objects, figured in this report, are linear; measurements are approximate. Decoration shown in diagram is as exact as to size as is possible in the case of a curved design represented on a flat surface.

Thanks are tendered to Dr. M. G. Miller, who has accompanied us on all our archæological expeditions, in charge of the anatomical portion of the work; to Mr. F. W. Hodge for literary revision of this report; and to Mr. Arthur W. Clime, who lent us efficient aid as assistant throughout the season of 1907–08.

We shall now describe our work on the lower Arkansas river, omitting many places where our quest was unsuccessful, and detailing only such as yielded tangible results.

MOUNDS AND SITES INVESTIGATED.

Near Menard Mound, Arkansas County.
Near Sawyer's Landing, Arkansas County.
Near Old River Landing, Arkansas County.
Mound near Goldman Field, Jefferson County.
Mound near Douglas, Lincoln County.
Cemetery near Greer, Jefferson County.

Near Menard Mound, Arkansas County.

The Menard mound[1] is about one mile WNW. from Menard Landing on the Arkansas river, and six miles, approximately, in an ESE. direction from Arkansas Post.

The mound is on property of Mr. J. Menard, who lives within fifty yards of its base, and who owns much land in the neighborhood, all which was placed at our disposal in the most cordial manner, as was much adjacent property belonging to Messrs. C. W. Wallace, A. L. Plant, and N. B. Menard—Mr. Wallace even allowing us to work for days in ground which had recently been plowed.

The high ground on which the mound is built, and much adjacent land, is not subject to overflow, to which so much of this region is exposed, and hence must have been the seat of a considerable aboriginal population, as it is about the first high land encountered in ascending the river.

[1] In relation to the Menard mound, see: W. H. Holmes, "Pottery from Arkansas," Third Ann. Rep. Bur. Am. Ethnol., p. 476, *et seq.*; and, Cyrus Thomas, "Mound Explorations," Twelfth Ann. Rep. Bur. Am. Ethnol., p. 229 *et seq.*

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The mound, a truncated cone, imposing in appearance, is 34.5 feet in height, measured from the north, where the surrounding territory is somewhat high; measured from the northwest, where there is a depression, the height of the mound is from 3 to 4 feet greater.

The basal diameter of the mound is 167 feet; the diameter of the summit plateau is 28 feet. On the southwest is a causeway of considerable size.

It is not in the mound, however, though some digging has deen done into it in the past, that the burials and accompanying artifacts, which have made the place famous, have been found, but in small rises of the ground in the adjacent land—dwelling-sites—and even in perfectly level ground. In all directions on the surrounding territory lie bits of pottery and fragments of human bones; in the fields; in the gardens; by the roadside; everywhere, in fact; and there is no inhabitant of the neighborhood but has exact details to give, based on personal experience, of the finding of quantities of aboriginal pottery.

Unfortunately for late comers, like ourselves, the constant wash of rain over soil loosened by cultivation had laid bare a majority of the burials, or so removed the soil above them that the plow had wrought sad havoc among bones and pottery; while desultory digging also had levied a considerable toll. In consequence, only gleanings remained for us from a former abundant harvest.

Our work near the Menard mound, with from eleven to thirteen men to dig, lasted twelve working days and began in the neighborhood of the Menard home, where the curious spectacle was presented of the unearthing by us of a number of burials, with accompanying vessels of earthenware, in Mr. Menard's "front yard," between his veranda and the garden fence.

Our investigations continued over the Menard orchard and fields; were carried on for a number of days in the dwelling-sites of Mr. Wallace's fields and woods, situated in a northeasterly direction from the mound; were extended to the field of Mr. Plant, somewhat farther in the same direction, and to the woods of Mr. N. Menard.

Our work in all the woods, however, was without success, so far as the discovery of pottery is concerned, though small mounds and rises of the ground are present in them in abundance.

One hundred and sixty burials were met with during our work near the Menard mound.

The bones varied somewhat as to condition, some being badly decayed, while in other cases long-bones were recovered entire.

Some of the bones showed the effects of inflammatory conditions; one instance of anchylosis of the radio-ulnar articulation was found; and also a reunited fracture of a radius and an ulna. The two latter specimens were sent to the United States Army Medical Museum, Washington, D. C.

Certain crania from this place were preserved, and in common with all crania found by us along the Arkansas river, are described by Dr. Hrdlička in a report which, as we have said, forms the concluding portion of this part of our report.

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Many fragments of crania, of considerable size, were found, some showing marks of post-natal compression and some evidently being parts of normal skulls.

No fixed orientation as to the head was noted in the burials found, skeletons having been interred with the skulls pointing in all directions.

The forms of burial were as follows:

Full length on back, 31.[1]
Closely flexed, lying on the right side, 5.
Closely flexed, lying on the left side, 4.
Closely flexed, face down, 1.
Partly flexed, lying on the right side, 17.
Partly flexed, lying on the left side, 5.
On back, the limbs widely separated, 1.
Full length on back, feet crossed, 1.
Trunk on back, knees slightly flexed to the right, 1.
Bunched burials, 39.[2]
Bunches or aboriginal disturbances, 2.
Disturbances, modern and aboriginal, 18.
Layers of bones, 2.
Children, bones often too decayed for determination of position, 23.
Badly decayed adult bones, 2.
Incompletely described in field-notes, 6.
Particularly described, 2.

The two burials to be particularly described are as follows:

Burial No. 12 was the skeleton of an adolescent, fifteen inches down, head NW., trunk on the back, the lower extremities turned to the left and slightly flexed, the legs being drawn tightly against the thighs.

Burial No. 108, fourteen inches below the surface, was a skeleton of an adult, with parts detached, yet not exactly a bunch.

We shall now describe in detail certain burials which are included in the foregoing list, to introduce the association of artifacts. All individual skeletons not otherwise defined were those of adults.

Burial No. 9, sixteen inches down, consisted of a bunch of children's bones, including three skulls. Near one skull were nine fresh-water, univalve shells, kindly identified by Dr. H. A. Pilsbry as *Viviparus subpurpureus*, the upper portions cut off to allow the use of the shells as beads.

Burial No. 10, eighteen inches deep (all depths are taken to the upper surface of the burials), consisted of a mass of bones in a grave distinctly traceable from the surface down.

These bones, an ideal example of the bunched form of burial (Fig. 1), lay in a symmetrical pile, the long-bones parallel, the smaller bones stowed away here and there between them.

[1] Two children lying side by side in one grave are included as a single burial.
[2] One consisting of bones of three children. Some bunches had two, three, four, five, and two had seven skulls each.

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At one end of the pile were three skulls; two of these, one of an adult, and one of a child, lay side by side on the base of the grave with the skull of a child upon them. Immediately behind these skulls, in among the long-bones, was the skull of another child.

This bunched burial lay ENE. and WSW., the skulls being at the eastern end.

The dimensions of the pile, which apparently included a full complement of bones for four skeletons, were: length, 29 inches; breadth, 15 inches; height, 7 inches.

FIG. 1.—Burial No. 10, a bunched burial. Near Menard Mound.

Near the bunch lay an undecorated bowl of earthenware.

The adult skull from this burial, showing cranial compression, is one of those sent by us to the National Museum.

Burial No. 13 was a great layer of mingled bones representing a number of skeletons and covering a considerable area. With this burial were the bases of several bowls or bottles, the upper parts of which had been plowed away, and a

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number of bone pins, some with carved heads, lying parallel one to another in a heap (Fig. 2).

Burial No. 46, a skeleton lying partly flexed on the right side, had, near the skull, a water-bottle and a vessel of a conventionalized shell-form, this latter vessel lying inverted over a mass of kaolin—white clay used by the aborigines for paint. Glass beads were near the skull.

Burial No. 48, closely flexed on the right side, had, at the skull, a bottle and two inverted bowls, in one of which latter was a musselshell.

At the chin of the skull were four pebbles, one pebble-hammer, and a mass of kaolin.

Burial No. 69, two feet down, was a bunched burial, very symmetrically arranged, the long-bones parallel, smaller bones stowed in between, the presence of fifteen humeri showing that the remains of at least eight individuals were represented in the burial. Though a number of lower jaws were present, only a single fragment of any other cranial part was found.

Burial No. 73 was the remains of a skeleton of a child, with an undecorated bowl and Vessel No. 103, a fine, polished effigy bottle of black ware (Fig. 16), representing a seated child with chubby legs extended, no doubt the property of the child when alive.

Burial No. 78, an interesting bunched burial, similar to several found by us near the Menard mound, consisted of a little pit with a lot of long-bones carefully put in perpendicularly, and surmounted by a skull. Near the skull were two vessels, one on its side and in contact with the bones.

Burial No. 160, partly flexed on the right side, had shell beads at the neck; a water-bottle near the skull; and near the bottle a mass of red pigment, to which allusion has already been made, and which Dr. H. F. Keller has determined to be a mixture of clay and oxide of iron, with a not very high percentage of the latter.

There were found near the Menard mound, glass beads with four burials; brass beads or small ornaments of brass, with five burials; and copper beads with one burial.

In one instance, a small mass of iron, badly rusted, lay with brass; and once small ornaments were so badly decayed that it was impossible to determine whether they were of brass or of copper.

Under the skull of a skeleton lay a small stone hatchet, and several hatchets (one of hornstone having an extremely sharp cutting edge) were found apart from human remains in the midden debris where most of the burials were. A gracefully-made hatchet of fair size, from the Wallace field, was given by us to Mr. Wallace, without determining the stone of which it is made.

Small quantities of shell beads lay with several burials.

With a burial was a tooth kindly identified by Prof. F. A. Lucas as the right upper incisor of a beaver. We are also indebted to Professor Lucas for identification of other material from dwelling-sites in the neighborhood of the Menard mound, as follows: a single canine tooth and the lower jaw of a black bear; part of the

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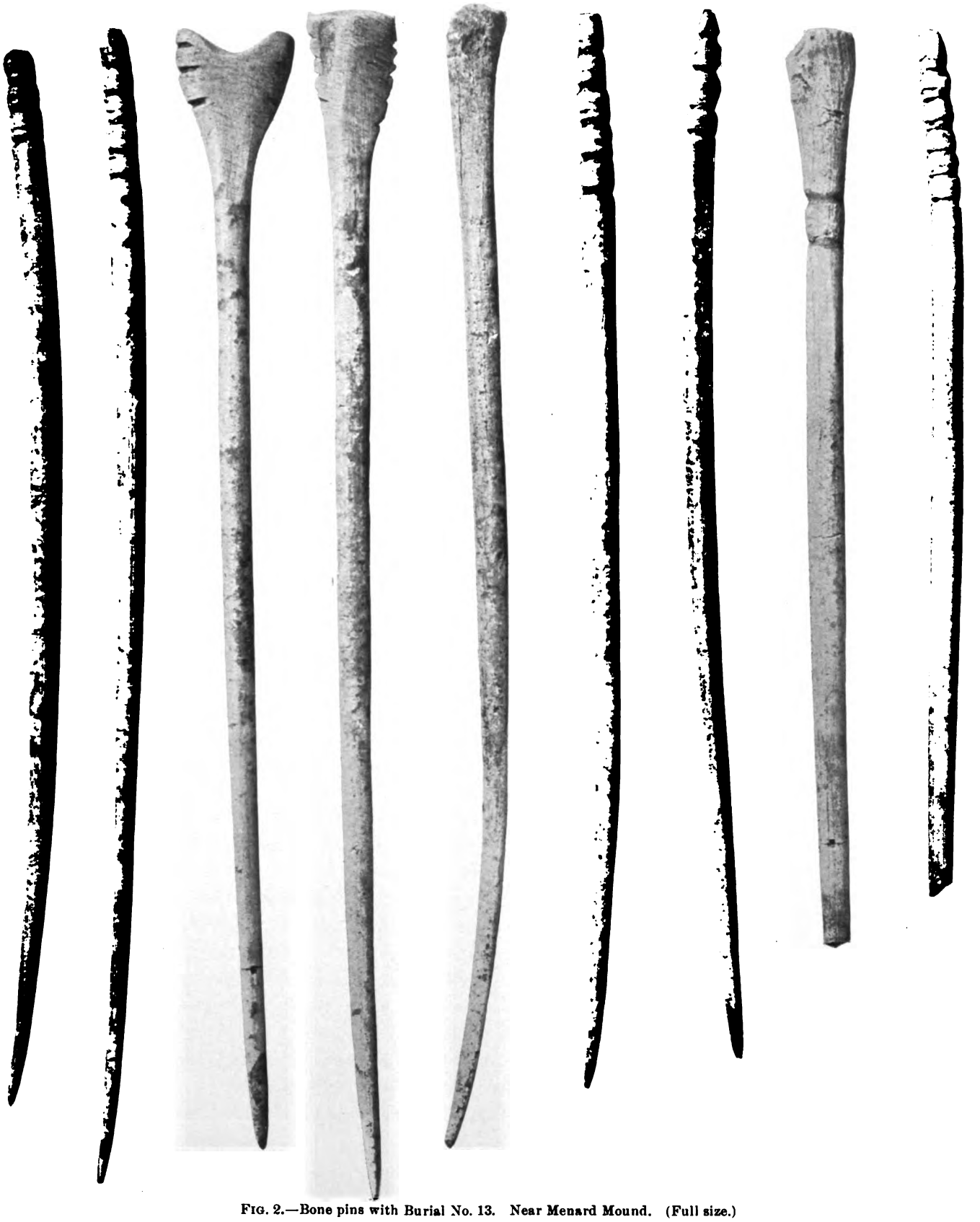

FIG. 2.—Bone pins with Burial No. 13. Near Menard Mound. (Full size.)

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skull of a Virginia deer, which "had been very neatly opened to extract the brains"; "parts of the right humerus and right radius of a bull buffalo, both from the same animal."

There were many bison bones in the Wallace field, some of considerable size.

Apart from burials were found: an awl of bone; tines of deer antlers, neatly severed from the horn by a cutting tool; a tubular bead of earthenware, 1.5 inches long, .5 inch thick; several pottery discs; several stone discs, none more than 3 inches in diameter; a large pebble worked into the form of a barrel, with a neatly drilled hole at one end, .6 of an inch in diameter and somewhat more than .5 of an inch in depth, with a considerable core remaining at the base; numerous rude arrowheads and knives, of chert; small cutting implements of the same material; and a number of chisels, each several inches in length, wrought from pebbles and having the original surface of the pebble still remaining in part.

A flat pebble about one inch in diameter was picked up on the surface; another pebble having a length of about two inches was found with the skeleton of a child. Both are shown in Fig. 3.

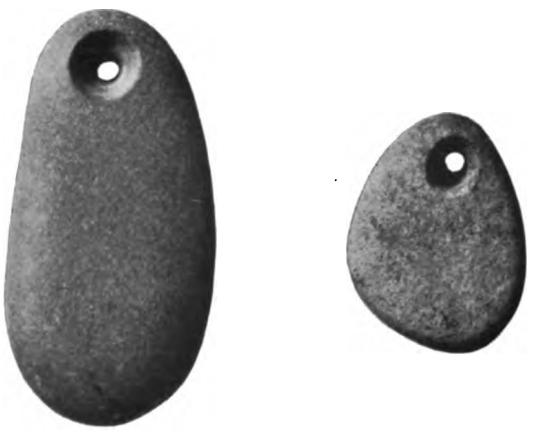

FIG. 3.—Perforated pebbles, near Menard Mound. (Full size.)

In the Wallace field was found a fragment of a conglomerate rock of high specific gravity, polished on both sides. Judging by the curvature of its inner and outer surfaces, it is evidently part of a large vessel.

We know the aborigines who inhabited the vicinity of the Menard mound were carvers of stone of no mean ability, as it was on the farm of Mr. W. N. Almond, about two miles from the mound, that Mr. Almond plowed up the two stone pipes and the beautiful ceremonial palette of stone shown in "The American Antiquarian"[1] and subsequently referred to by Professor Holmes[2] in an instructive paper.

We visited Mr. Almond and, with his permission, dug where the disc had been found, but without result.

The palette and pipes are now owned by Mr. H. L. Stoddard, of Stuttgart, Ark.

From a low mound in the Wallace field came a quartz crystal bearing no groove for suspension. Father Le Petit,[3] speaking of the Natchez Indians, describes their idols as figures of stone or of baked clay; also bones of big fish and bits of crystal; and Father Gravier[4] tells of a bit of crystal in the Natchez temple.

At the present time many and beautiful specimens of quartz crystals come from the Hot Springs, Ark.

[1] May and June, 1904, pp. 154, 155.
[2] "Certain Notched or Scallopped Stone Tablets of the Moundbuilders," Amer. Anthropologist, Jan.-March, 1906.
[3] French, Hist. Coll. of La., Part III, p. 141.
[4] French, Hist. Coll. of La. and Fla., 1875, p. 82.

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Also in midden refuse was part of a bowl of a rude pipe of earthenware. Professor Holmes, speaking of the earthenware pipes of the region of which the Arkansas valley forms part, truly says:[1] "In the central and southwestern sections pipes were for the most part remarkably rude and without grace of outline, and generally without embellishment, while the earthenware of the same territory was well made and exhibits pronounced indications of esthetic appreciation on the part of the potters."

Two hundred and fourteen vessels of earthenware, mostly undecorated and of ordinary form, came from the neighborhood of the Menard mound. In this number we include all vessels, broken and whole, and fragments large enough to show that a vessel had been interred.

While some burials were without accompanying pottery, the majority of interments had a mortuary tribute of this kind, especially in the Menard place in the vicinity of the mound, and in Mr. Wallace's field.

On the other hand, the few burials found by us in the woods, and a fair number of skeletons in Mr. Plant's field, were without artifacts of any sort.

As a general rule, vessels lay near the heads of burials and were usually single or a pair. In exceptional cases vessels were found by us at other parts of the skeletons, and on one occasion so many as ten were found with a single burial.

More fully to illustrate certain of these exceptional cases, we shall describe some of the noteworthy burials in detail.

Burial No. 62, bones of a child, had at the skull two bowls of moderate size, one inverted; a small bottle, and a diminutive saucer placed on its edge.

Burial No. 83, the skull of a child from which the remaining bones probably had disappeared through decay, had around it no fewer than ten vessels, comprising two nests of three each and four vessels placed singly, the skull being entirely surrounded.

Burial No. 98, a skeleton lying partly flexed on the right side, had near the pelvis, and also near the feet, which drawn back, approached the pelvis, an inverted bowl more or less covering two small, inverted bowls, side by side, which were lying on a fourth bowl, also inverted. In contact with this mass of pottery was a small bowl tilted on its side.

Incidentally, we may say that decayed shell beads were at the neck of the skeleton, and a knife wrought from a chert pebble lay near the skull.

Burial No. 150 consisted of a bunch of bones with three skulls, one of them being that of a child. Crushed against one skull was an inverted bowl, and nearby were a teapot-shaped vessel, in fragments, and a bowl.

Near the child's skull were two small water-bottles, while the other adult skull had near it a vessel of eccentric form.

The crania in this bunch lay separated one from another, the child's skull being on top, one adult's skull at one end, and the remaining skull somewhat at the side.

[1] "Aboriginal Pottery of Eastern United States," Twentieth Ann. Rep. Bur. Am. Ethnol., p. 98.

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We shall now describe in detail the more noteworthy vessels from the neighborhood of the Menard mound.

Vessel No. 34. This beautiful bottle (Plate XIII) is one of the very few vessels found by us on the lower Arkansas river showing in two colors a design other than the scroll. The ware is light yellow. The body is globular, but projects somewhat at the base, which is flattened. The long, graceful neck, flaring toward the aperture, is coated with pigment, brick-red in color. Around the body are spaces of the yellow ware, defined by white pigment. These spaces, circular on top, with extensions tapering downward, have precisely the shape of the copper pendants found by us in the great prehistoric site at Moundville, Ala., the circular portions of which contain either swastikas or stars. On this vessel similar spaces enclose five-pointed stars on the upper row, and figures somewhat resembling an arrowhead on the lower tier. All these stars and projectile points (if that is what the latter represent) are colored with brick-red pigment.

The star does not seem to have been extensively employed on the ware of the middle Mississippi region. An example, however, is described as coming from southern Missouri.[1]

Vessel No. 170 is a bottle of yellow ware, 4.7 inches in height, with red pigment exteriorly on the neck. The decoration on the body consists of four irregular circles of solid color, red and white alternately. Each of these circles is surrounded by a circular space without paint, showing yellow ware, which space is, in turn, enclosed in a painted circle, white around the red and red around the white The same style of decoration may be seen on the small "teapot" vessel in Plate XX.

Vessel No. 194, of dark ware (Fig. 4), is of the "teapot" variety which, as we have said in our introductory remarks, is found only in eastern Arkansas or in nearby regions.

It seems to us there is a possibility that this type of vessel may be derived from the gourd, although vessels that unmistakably represent the gourd usually have a small depression opposite the neck, or extended part, though such is not invariably the case, as we have seen a few examples in which the knob and not the depression is present. In Fig. 5 is shown a gourd-vessel from southern Missouri,[2] which, were the upper part of the neck cut away and a smaller aperture present on the top, could well be a vessel of the "teapot" class.

Vessel No. 78 is a toy-vessel of dark ware, of the "teapot" variety (Fig. 6), the smallest of this kind found by us along the Arkansas river. The spout and part of the opening have been restored.

Vessel No. 64 also belongs to the "teapot" variety, and is 7.6 inches in height. The vessel has a uniform coating of red pigment, which is well preserved and gives the vessel a rich and striking appearance.

Vessel No. 166 is another of the "teapot" form, coated with red pigment. Its height is 3 inches, a size evidently fitting it for a child's use. In this particular

[1] Dr. Edward Evers, "Archæology of Missouri," Part I, Pl. IV, Fig. 1.
[2] Evers, *op. cit.*, Pl. XIV, No. 228.

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CERTAIN MOUNDS OF ARKANSAS AND OF MISSISSIPPI.
NEAR MENARD MOUND, VESSEL NO. 34. (HEIGHT, 9.6 INCHES.)

COCKAYNE, BOSTON.

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FIG. 4.—Vessel No. 194, of the "teapot" variety. Near Menard Mound. (Height 6.25 inches.)

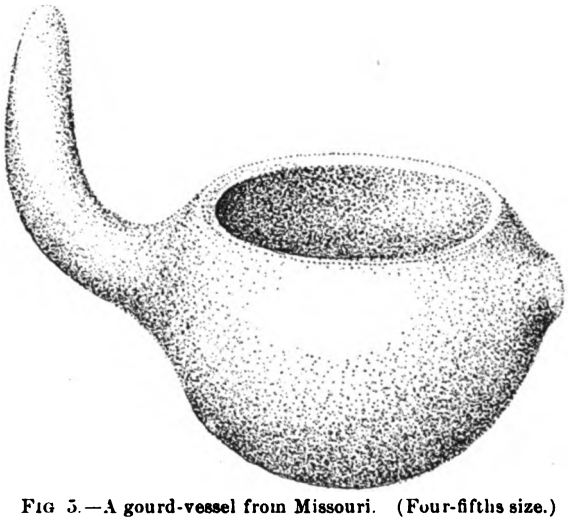

FIG 5.—A gourd-vessel from Missouri. (Four-fifths size.)

FIG. 6.—Vessel No. 78. Near Menard Mound. (Full size.)

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instance there was a group of five vessels, mostly small, with no human remains visibly in association. Presumably the skeleton of an infant had disappeared through decay.

Vessel No. 82 is another of the "teapots," 3.8 inches in height, with a coating of red pigment, somewhat worn in places. In relief on two opposite sides are modeled the legs of a frog. The head, which has been on that part of the vessel opposite the spout, is missing through breakage in aboriginal times. We shall figure in its proper place a more complete frog-"teapot" from another site. (See Plate XVI.)

FIG. 7.—Vessel No. 91. Near Menard Mound. (Diameter of bowl 7.5 inches.)

Vessel No. 91, of dark ware, is a life-form representing a quadruped, the legs being used as supports for the vessel. On one side is a small head which does not aid us in determining the animal represented, while on the opposite side is a tail turned downward. The decoration, made with a broad, trailing point, is of the scroll variety (Fig. 7).

Vessel No. 50 is a graceful bottle of yellow ware, with a neck first contracting, then flaring. The decoration consists of a coating of red pigment on the neck and, on the body, partly interlocked scrolls in red and white, as shown in Plate XIV.

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CERTAIN MOUNDS OF ARKANSAS AND OF MISSISSIPPI.
NEAR MENARD MOUND, VESSEL NO. 50. (HEIGHT, 9.5 INCHES.)

COCKAYNE, BOSTON.

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CERTAIN MOUNDS OF ARKANSAS AND OF MISSISSIPPI.
NEAR MENARD MOUND, VESSEL NO. 133. (FULL SIZE.)

COCKAYNE, BOSTON.

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So many vessels of this type and style of decoration were found by us along the Arkansas river that we shall not describe particularly any other than this one.

Vessel No. 38. This graceful vessel, shown in Fig. 8, is of black ware, and has an evenly made decoration of trailed, broad lines, which is precisely similar to one shown by Professor Holmes[1] and described as coming from the lower Mississippi region.

Vessel No. 65 is a bottle of dark ware, ellipsoidal in shape, bearing on one side, partly incised and partly in relief, the head perhaps of a quadruped or possibly of a fish. On the opposite side appears an upraised tail. The eyes are distinctly aboriginal in execution (Fig. 9).

FIG. 8.—Vessel No. 38. Near Menard Mound. (Diameter 7.3 inches.)

An almost exact counterpart of this vessel, which also came from near the Menard mound, is twice figured by Professor Holmes.[2]

Vessel No. 133 is a bottle of yellow ware, well coated with red pigment, and represents a deep-bodied fish similar to the sunfish. The head and tail project from the body of the vessel as do ventral and dorsal fins (Plate XV). In the plate the neck of the vessel, which is 1.6 inches in length, of necessity appears somewhat foreshortened. The aperture is slightly exaggerated in size owing to its prox-

[1] "Aboriginal Pottery of the Eastern United States," Twentieth Ann. Rep. Bur. Am. Ethnol., Pls. LId and LIIIb.

[2] Third Ann. Rep. Bur. Am. Ethnol., p. 482. Twentieth Ann. Rep. Bur. Am. Ethnol., Pl. XXIIId.

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imity to the camera in the initial process of preparation of the plate. Around the neck is considerable abrasion, as by the use of a cord for suspension.

Vessel No. 185 is a bottle of yellow ware, 5.3 inches high, also a life-form representing a fish not unlike the one just described. Much of its original coating of red paint has been worn away.

FIG. 9.—Vessel No. 65. Near Menard Mound. (Height 5.6 inches.)

Vessel No. 61 is a bottle of rather coarse, yellow ware, the body ovoid with flattened base. The incised decoration, rather roughly executed, consists of a meander surrounding circles (Fig. 10).

Vessel No. 30 is a wide-mouthed water-bottle or jar, of dark and rather porous ware. The decoration, which is of broad, trailed lines, is a volute design five times shown (Fig. 11).

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Vessel No. 36 is a graceful bottle of dark ware, having a design of which the scroll forms part, conferred by imprints of a blunt-pointed implement, as shown in Fig. 12.

Vessel No. 62 is an undecorated bottle of dark, porous ware, shown in Fig. 13.

Vessel No. 31 is a wide-mouthed bottle or jar, of dark ware, having a hemispherical body on which is a meander decoration consisting of three parallel bands of punctate markings enclosed within parallel lines (Fig. 14). In addition, on the base is a design represented in Fig. 15.

FIG. 10.—Vessel No. 61. Near Menard Mound. (Height 9.9 inches.)

Vessel No. 102 (Figs. 16, 17) is a human effigy-vessel of hard, dark ware, to which reference has been made in an earlier part of this report. This life-form represents a child with its plump legs extended, and doubtless has been the property of the little one with whose remains it was found.

Vessel No. 88 is a pot of yellow ware, with a design in which the scroll conferred by a broad-pointed tool trailed over the surface, figures in combination with punctate markings (Fig. 18).

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FIG. 11.—Vessel No. 30. Near Menard Mound. (Height 7.3 inches.)

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FIG. 12.—Vessel No. 36. Near Menard Mound. (Height 9.7 inches.)

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FIG. 15.—Vessel No. 31. Decoration of base.

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Vessel No. 35, of dark ware, 6.7 inches in height, with a circular opening at the top, near which is a small knob, is intended to represent a gourd. An almost exactly similar vessel from Arkansas is figured by Professor Holmes.[1]

FIG. 13.—Vessel No. 62. Near Menard Mound. (Height 7.2 inches.)

Vessel No. 208, a vase of gray, porous ware, light in weight, with base resembling a much truncated cone reversed (Fig. 19), has an interesting incised decoration around the body (Fig. 20), sug gestive of the bird-head motive.

Vessel No. 200 is a vase of gray, porous ware, of somewhat unusual form, without decoration (Fig. 21).

Vessel No. 55. We have here a bowl of yellow ware (Fig. 22), with an interior coating of red paint and a band of red pigment below the margin on the outside, such as is usually found on vessels of this character along the lower Arkansas river. On one side is a rudely modeled human head with high crest, looking outward; on the other side, the conventional tail—both head and tail having a coating of red pigment.

Vessel No. 114 (Fig. 23) differs from the one just described in minor details only.

Vessel No. 174 is a bowl of coarse, yellow

FIG. 14.—Vessel No. 31. Near Menard Mound. (Diameter 7.4 inches.)

[1] Twentieth Ann. Rep. Bur. Am. Ethnol., Pl. XIXf.

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FIG. 16.—Vessel No. 102. Near Menard Mound. (Height 6.8 inches.)

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FIG. 17.—Vessel No. 102. Side view.

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FIG. 18.—Vessel No. 88. Near Menard Mound. (Diameter 4.5 inches.)

FIG. 19.—Vessel No. 208. Near Menard Mound. (Diameter 6.3 inches.)

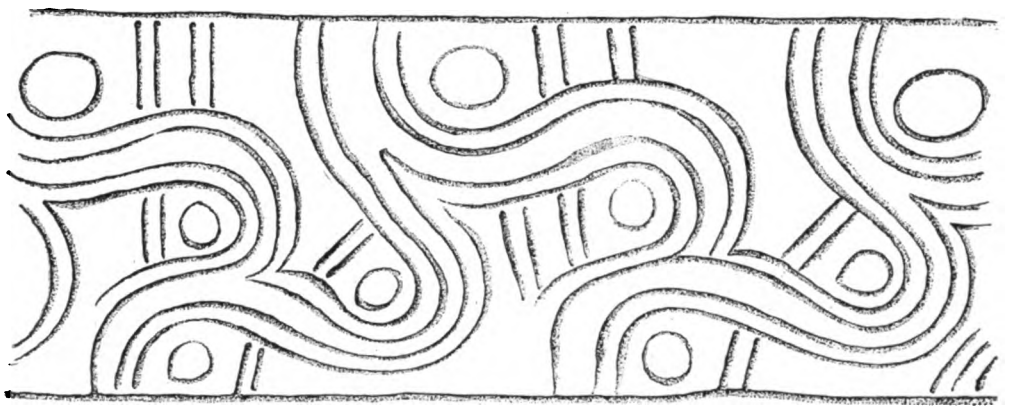

FIG. 20.—Vessel No. 208. Decoration. (Half size.)

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FIG. 21.—Vessel No. 200. Near Menard Mound. (Diameter 4.9 inches.)

FIG. 22.—Vessel No. 55. Near Menard Mound. (Diameter 6.5 inches.)

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ware (Fig. 24) with pigment decoration, having the head of a bird modeled on one side and conventional tail on the opposite side.

Vessel No. 171, a bowl of yellow ware, having on each side, marginally, a

FIG. 23.—Vessel No. 114. Near Menard Mound. (Diameter 8.1 inches.)

band of red pigment, and in the lower part of the interior, shown in red pigment, the circle and cross, *i.e.*, the symbol of the sun and the four winds, or directions (Fig. 25).

FIG. 24.—Vessel No. 174. Near Menard Mound. (Diameter 10 inches.)

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Joutel[1] (1687) tells in a most interesting way how the Cenis (Hasinai, or Caddo) Indians of Texas, in celebrating a successful battle, held out scalps toward the four directions.

Vessel No. 139 is a bowl (Fig. 26) similar to the one just described, with the addition of equidistant, festooned bands of red pigment between the arms of the cross. These semicircles probably represent (a part for the whole) entire circles, or sun symbols.[2]

FIG. 25.—Vessel No. 171. Near Menard Mound. (Diameter 7 inches.)

NEAR SAWYER'S LANDING, ARKANSAS COUNTY.

Sawyer's Landing is five miles, approximately, by water, below Arkansas Post, on the same side of the river.

About one mile in a southeasterly direction from the landing is the home of a colored family named Johnson, in front of whose doorway is a small mound in which our search was not rewarded.

[1] French, Hist. Coll. of La., Part I, p. 161.

[2] Charles C. Willoughby, "An Analysis of the Decorations upon Pottery from the Mississippi Valley," Journ. Am. Folk-Lore, Vol. X, 1897, p. 13.

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A large field adjacent to the Johnson property, which had been under cultivation but was fallow at the time of our visit, was placed at our disposal by Messrs. Pettit and Pettit, of Stuttgart, Ark., to whom the warm thanks of the Academy are tendered.

On the surface we found a brass disc about 1.5 inches in diameter, with a central perforation. Analysis by Doctor Keller showed the disc to be of very impure brass, containing, besides copper and zinc, very considerable amounts of lead and iron, as well as traces of arsenic and silver.

FIG. 26.—Vessel No. 139. Near Menard Mound. (Diameter 6.5 inches.)

We devoted part of a forenoon to this field, sinking holes here and there, with the result that seven burials were met with, all near together, in the highest part of the field.

Six of these burials certainly were of the bunched variety, one containing bones belonging to at least two skeletons. The remaining burial—probably a bunch also—had been disturbed by recent cultivation.

No bones were in a condition to save.

Twelve vessels were found in connection with these burials, many crushed and

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some broken by the plow. Some burials were without artifacts, while as many as four vessels lay with one interment, a water-bottle having been placed on top of three small, shallow bowls, arranged one above the other.

Vessel No. 5, of yellow ware, is a bowl with a bird's head on one side, and a conventional tail on the other. The only point of interest about this vessel is that the crest of the bird is represented by excisions, an unusual method (Fig. 27).

Vessel No. 7 is a small bowl with the head of a frog extending forward from it, and fore-legs and hind-legs modeled in relief.

FIG. 27.—Vessel No. 5. Near Sawyer's Landing. (Diameter 8.75 inches.)

The aboriginal artist has not been trammeled by details, as the fore-feet of the frog are represented with three toes each and the hind-feet each with four toes —one too few in each case, as the reader is doubtless aware.

NEAR OLD RIVER LANDING, ARKANSAS COUNTY.

Old river (a former course of the Arkansas) is about 3.5 miles above Arkansas Post, following the river, on the same side.

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By landing at the lower side of the lower mouth of Old river and following a road parallel to it, about 1.5 miles, we reached the property of Mr. H. S. Jones, of Arkansas Post, to whom we are greatly indebted for cordial permission to investigate whatever portion we saw fit.

Near the road, forming part of Mr. Jones' property is a field (twelve acres in extent, we are informed), at the eastern corner of which rises a mound about 5 feet in height and 75 feet, approximately, across its somewhat irregular base, except where a small part of the mound is cut away by a cross-road, where the diameter is, of course, somewhat less.

Part of the mound, not being on Mr. Jones' property, was not dug into by us. The part investigated yielded nothing except the neckless body of a water-bottle, that probably got in with the clay material of which the mound is made.

The history of the twelve-acre field and of an unenclosed field on the other side of the cross-road, which latter field has now been so denuded of soil by heavy wash of rain after cultivation that careful investigation by us was without result, is a long list of discoveries of earthenware vessels, by all who have had a hand in the cultivation of the property.

In the twelve-acre field, which is higher than most of the surrounding land and is not subject to overflow, and in the adjacent barnyard of Mr. L. F. Shepherd, the manager of the property, are a number of circular rises of the ground, all dwelling-sites from which, with the exception of those in the barnyard, which have not been under cultivation, the plow had turned out much clay, hard and red from ancient fires.

Two of these dwelling-sites (those nearest the mound) were each about 40 feet in diameter, the others somewhat less.

The sites, nine in all, were carefully dug by us and nearly all found to contain burials and artifacts, but to a very different extent.

About 30 yards W. by N. from the mound was one of the larger elevations which had been long and deeply plowed over and doubtless deprived of much of its original contents, many of the burials being but 6 inches below the surface—the upper parts of the most deeply buried being but 18 inches down.

From this site came thirty burials, thirty-four additional being found in the other dwelling-sites which had been less deeply plowed and consequently in which bones and artifacts were in somewhat better condition.

All bones, however, were badly affected by decay; no crania were saved, but large fragments of some showed moderate artificial cranial compression.

As the forms of burial in these dwelling-sites near Old River Landing presented nothing markedly different from those met with near the Menard mound, they will not be described, although exact details are given in our field-notes.

In one dwelling-site were found several burials which we could not positively assign to either the flexed burial or to the bunched method of interment. These particular burials, each made up of the parts of one skeleton only, had the bones largely in place; a few, however, were in disorder. Presumably these latter bones,

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having become detached in the dead-house or on their way to the place of burial, were piled in indiscriminately at the time of interment.

The yield of artifacts other than pottery, was meager indeed.

With a bunched burial was a diminutive pipe of limestone, so water-soaked that parts fell from it on removal.

Near the skull of a bunched burial was a quartz crystal showing no sign of workmanship.

Burial No. 17, consisting of what was left by decay of the skeleton of an infant or of a very young child, had with it, in addition to two earthenware vessels, seven cones of sheet-brass, from two to three inches in height; a number of blue glass beads; and fifteen very roughly-made shell beads, from .4 of an inch to somewhat more than 1 inch in length. The shell beads are about as rough in appearance as any we have met with in all our experience, being little more than perforated fragments of shell.

Burial No. 27, a skeleton of an adult, partly flexed, lying on the left side, besides having two vessels of earthenware near the skull and upper part of the trunk, had near the neck six shell beads, or rather six rough sections of shell that had been made to do duty as beads, one of which is shown in Fig. 28.

With another burial having vessels in association were beads of blue glass.

Burial No. 65, the skeleton of an adult, lying partly flexed on the right side, had with it, in addition to two vessels, two small "celts" lying together between the vessels and the skull. We have not thought it worth while to mutilate these "celts" for microscopic slides and for material for analysis, to determine the stone or stones of which they are made, and deem it useless to hazard a guess on the subject.

FIG. 28.—Shell bead. Old River Landing. (Full size.)

Another small "celt" of hornstone, like one found near the Menard mound, is remarkable for the sharpness of its edge.

In debris of the dwelling-sites were several small chisels wrought from pebbles of chert; one or two diminutive "celts"; and a canine tooth identified by Professor Lucas as having belonged to a black bear.

From the surface of the two fields to which reference has been made, but doubtless in many cases plowed or washed from dwelling-sites now, or formerly, on these fields, came neatly-made arrowheads of chert; small chisels of chipped chert; diminutive cutting-tools of like material; and two flat pebbles perforated for suspension, similar to those from near the Menard mound.

Associated with the thirty burials encountered in the dwelling-site we have referred to, were forty-nine vessels of earthenware—many, however, crushed and broken.

In all the sites examined eighty-two vessels lay with the sixty-four burials, if we include several vessels not immediately with interments, but which doubtless had been separated from them by the plow.

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The pottery of the Old River dwelling-sites, as a rule, lay near the skull, but, as usual, there were exceptions.

Much of the ware was inferior in quality and friable to the last degree after its long exposure to continual soaking with water.

FIG. 29.—Vessel No. 1. Old River Landing. (Height 8 inches.)

As a rule, the vessels met with presented no novelty in form, and were mainly pots, bowls, and bottles.

Many of the vessels are undecorated. Pigment is the principal form of decoration employed—red, or white and red in combination. Exceptionally, black coloring-material, now hardly more than a stain had been used.

One feature connected with this place was new in our experience. Nearly all

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CERTAIN MOUNDS OF ARKANSAS AND OF MISSISSIPPI.
NEAR OLD RIVER LANDING, VESSEL NO. 19. (FULL SIZE.)

COCKAYNE, BOSTON.

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the bowls—and a large number of the vessels found were bowls—had been placed in the ground inverted. This fact may denote that at this place at least, the bowls, when placed with the burials, did not contain offerings of food.

In some cases, one vessel had been placed within another, as, for instance, a pot resting inverted within another pot. Another vessel was found turned over a smaller one which was itself inverted.

The more noteworthy vessels will now be described in detail.

Vessel No. 19 is an interesting example of the life-form and "teapot" vessel combined. From one side projects the head of a frog, while on the opposite side is the spout (a restoration) of the "teapot." In connection with these are the legs of a frog modeled in relief (Plate XVI). The upper part of the vessel is coated with red pigment, while the lower part has been covered with white coloring-material, now largely worn away.

Professor Holmes, as we have noted in our introductory remarks, describes[1] and figures[2] an animal form "teapot" from "Mississippi." The fine specimen referred to by him differs from ours, however, in that the head is apparently not that of a frog, while the legs, instead of being modeled in relief on the vessel, extend vertically downward and serve as supports.

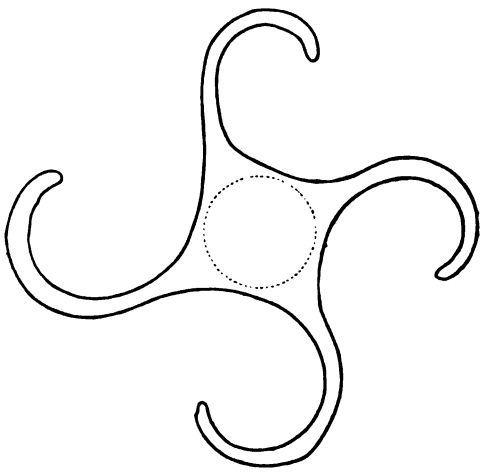

FIG. 30.—Vessel No. 1. Part of the decoration. (One-fifth size.)

Vessel No. 1. This vessel, a bottle, was found in many fragments that have since been cemented together with slight restoration of the body and almost complete restoration of the neck (Fig. 29). The ware, which is yellow, appears in but two or three spots where the painted designs, which are pink and white, are not in contact through oversight on the part of the aboriginal artist. Both varieties of pigment on this vessel have adhered exceptionally well, no flaking being apparent.

The design differs from that[3] on most of the bottles decorated in two colors, met with by us along the lower Arkansas river, and consists of a current scroll in deep pink surrounding the body of the vessel, with an encircling band of white above and below, from which four equidistant arms extend downward and upward, respectively, forming, in connection with each other, partly interlocked scrolls; at the same time the upper and the lower circles and arms form swastikas of a pattern shown in Fig. 30.

The neck of the bottle has been pink, matching the current scroll decoration,

[1] Fourth Ann. Rep. Bur. Am. Ethnol., p. 403.
[2] Twentieth Ann. Rep. Bur. Am. Ethnol., Pl. XLb.
[3] *I. e.*, partly interlinked scrolls, shown in Pl. XIV.

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and a slight extension at the base of the vessel, having a flat under surface, is coated with pigment of the same shade on such parts as are visible.

It is interesting to note that two bottles bearing almost exactly similar decoration to that just described, were found in a mound in Coahoma county, Mississippi.[1]

Vessel No. 28, a gracefully formed, acorn-shaped vessel of dark, smooth ware, 4.5 inches in height, bears around the upper portion a design six times shown, consisting of partly interlocked scrolls, each having on its upper part a small, roughly triangular space filled with reticulated lines. The entire design is a conventionalized decoration derived from the representation of crested serpents on earthenware, the evolution of which we have shown[2] step by step, through the merging

FIG. 31.—Vessel No. 26. Old River Landing. (Height 5.4 inches.)

[1] Charles Peabody, "Exploration of Mounds, Coahoma County, Mississippi," Peabody Museum Papers, Vol. III, No. 2, Pl. XV.

[2] "Moundville Revisited," Fig. 65 to Fig. 73, inclusive. Journal of the Academy of Natural Sciences of Philadelphia, Vol. XIII.

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CERTAIN MOUNDS OF ARKANSAS AND OF MISSISSIPPI.

NEAR OLD RIVER LANDING, VESSEL NO. 45. (FULL SIZE.)

COCKAYNE, BOSTON.

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of crested serpents, and interlinked, crested scrolls, down to the scroll pure and simple.

Vessel No. 26 is a bottle of dark and rather inferior ware, with double encircling lines of projections around the body (Fig. 31).

Vessel No. 52. This curious vase of porous, yellow ware, shown in three positions in Figs. 32, 33, 34, bears an incised decoration representing a face on one side of the body of the vessel, and scroll designs over the remaining portions.

FIG. 32.—Vessel No. 52. Old River Landing. (Full size.)

Vessel No. 45. This beautiful vessel, of the "teapot" variety (Plate XVII,) is of yellow ware and has a scroll design alternately deep red and pink. The neck is red, and the red and pink scrolls continue up the spout, as does a streak of black separating the other two colors. The base is black (or rather has been black,

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FIG. 33.—Vessel No. 52. Side view. (Full size.)

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FIG. 34.—Vessel No. 52. Back view. (Full size.)

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as hardly more than a stain remains) and the color projects upward from the base between the pink pigment and the red.

Vessel No. 78 is a bowl of dark ware, representing a turtle (Fig. 35), the head, tail, and flippers projecting. Two holes on opposite sides of the vessel have served for suspension.

Vessel No. 21, a cooking-pot, has considerable soot still adhering. It bears a

FIG. 35.—Vessel No. 78. Old River Landing. (Diameter 6 inches.)

rude decoration largely made up of concentric circles, probably sun-symbols, apparently made by the imprint of coarse cord (Fig. 36).

Vessel No. 21a is a pot of yellow ware, with the curious incised decoration shown in Fig. 37. This vessel has been in use for culinary purposes, as traces of soot remain on the outside.

Vessels Nos. 9 and 27 are bowls of moderate size, each with four equidistant loop-handles below the rim, and an upper, outer, encircling band of red pigment, somewhat more than one inch in width. The interiors of both bowls have rich coatings of red pigment.

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FIG. 36.—Vessel No. 21. Old River Landing. (Diameter 7.75 inches.)

FIG. 37.—Vessel No. 21a. Old River Landing. (Height 4.8 inches.)

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Vessel No. 46 is a bowl (Fig. 38) with interior coating of red paint and a band of the same color, about one inch in width extending below the rim. A human head, modeled in an upright position, looks outward on one side and a conventional tail projects horizontally from the opposite side.

FIG. 38.—Vessel No. 46. Old River Landing. (Diameter 7.4 inches.)

FIG. 39.—Vessel No. 54. Old River Landing. (Diameter 7.5 inches.)

Vessel No. 54, decorated with red pigment, like the vessel just described, has the head of a bird on one side and the usual conventional tail on the other side (Fig. 39).

Vessel No. 14 is a bowl of porous, yellow ware, decorated with red paint in

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the same manner as are the two last preceding vessels, and having, in place of a modeled head taken from life, a diamond-shaped figure with four perforations. The conventional tail is present (Fig. 40).

Mound near Goldman Field, Jefferson County.

Goldman field is on the bank of the Arkansas river about six miles by water below the settlement of Douglas, but on the opposite side, that is on the right-hand side, going up.

In woods subject to overflow, about one-half mile NW. by N. from Goldman field, is a mound about 4.5 feet high and 87 feet across its circular base.

Fig. 40.—Vessel No. 14. Old River Landing. (Diameter 7.2 inches.)

Thirteen holes were sunk by us in this mound, resulting in the discovery of six burials, between 8 inches and 38 inches in depth.

Three of these burials consisted of layers of fragments of calcined human bones, one layer being of considerable size, the bones representing several individuals.

With these layers were charcoal and masses of clay reddened by fire. The cremation, however, did not appear to have taken place in the mound, but elsewhere, the reddened clay and charcoal seemingly having been gathered up with the bones for their final deposit.

With one of the layers of calcined bones was a "celt" apparently of igneous rock.

Two of the burials were limited each to a badly decayed, isolated skull. With

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one was an undecorated bowl; with the other, a bowl bearing rude, encircling lines, and having had, above the rim, the head of a bird or quadruped, part of which had been broken off before interment. Both bowls were of most inferior ware and in fragments.

The remaining burial was a badly decayed skeleton, closely flexed and lying on the right side.

Apart from human remains, in the mound was a rude knife wrought from cherty material.

Mound near Douglas, Lincoln County.

In the verge of woods, about two miles ESE. from Douglas, on property of Mr. R. E. Lake, of Douglas, who kindly placed it at our disposal, was a mound 6.5 feet high and 70 feet across its circular base. The summit plateau, also circular, was 22 feet in diameter.

The mound had sustained some digging in the past by treasure seekers, we were told, and, to a limited extent, on one or two occasions, by inhabitants of Douglas. This digging, however, had not affected the height of the mound or its diameter.

On the western side of the mound was a depression, filled with water at the time of our visit, whence material for the building of the mound had been taken; and a similar, though smaller, depression was on the opposite side.

After some exploratory digging, it was found that only the core of the mound contained burials, and these were superficial, the mound apparently having been originally a domiciliary one and subsequently used as a cemetery.

The core of the mound, 44 feet in diameter, was dug out by us, at first along the base, then a little above it, until a portion 16 feet in diameter remained. This part was dug out to a depth of 3 feet, as no burials had been met with deeper than 31 inches.

Thirty-two burials were encountered, all proving to be of the bunched variety, wherever determination was possible. Those not classified were disturbances in some cases; in others, where many bones seemed to have disappeared through decay. Several also were bones of children, much crushed and disintegrated.

No skull was found in condition to save or, with one exception, in fragments large enough to enable determination as to cranial compression. In this one case, no compression was apparent.

A pathological specimen found by us in this mound was sent to the United States Army Medical Museum. Dr. D. S. Lamb, pathologist of that institution, kindly has reported on the bone as follows:

"The right femur, from mound near Douglas, Arkansas County, Ark., Burial No. 12, shows marked atrophy of the head of the bone and downward displacement, the neck forming an acute angle with the shaft, probably a case of tuberculous hipjoint. I say 'probably,' but I know of no other cause than tuberculosis that would cause such a lesion."

But few artifacts except pottery were present in the mound. With several burials were shell beads.

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Burial No. 9 had a bottle and a bowl near the skull, and at the neck, tubular beads of sheet-brass and small shell beads.

Burial No. 17, a bunched burial, had at one end two skulls side by side. Immediately above one of these skulls, and covering part of it and the whole of a downturned vessel resembling the one shown in Plate XIX, which lay against the skull, was an inverted bowl, decorated with red paint. Alongside the first-mentioned vessel, but not covered by the bowl, lay, on its side, a small vessel of the "teapot" variety. Near this group of vessels were two others, one being a small bottle, decorated with a coating of red pigment; the other, a little vessel of coarse, yellow ware, having two compartments—no doubt a highly-conventionalized, open-bivalve form. With the two skulls described (which had belonged to adults) and their accompanying bones, were the skull and bones of an infant, which fact explains, no doubt, the presence of the smaller vessels. Near the chin of the infant's skull, that is to say at the neck, was a necklace of tubular beads of sheet-brass, the material on which they were strung still holding the beads in place. Near these were two diminutive, penannular bracelets of sheet-copper, of a size suited to baby arms (Fig. 41), round in cross-section, and tied together, the cord still intact through the agency of the salts of copper. Near the bracelets were one glass bead and one tubular bead of brass.

At the opposite end of this bunched burial, away from the skulls, were two vessels together, both inverted and both (a bottle and a "teapot") belonging to classes of vessels rarely found in that position.

Burial No. 22, that of an infant, had near small fragments of the skull, a necklace (Fig. 42) made up of tubular beads of sheet-brass and shell beads, the material on which the beads were strung being still capable of sustaining the weight of the necklace. Nearby were nine large shell beads, and a few shells kindly identified by Dr. H. A. Pilsbry as *Marginella apicina*. A part of each of these shells had been cut away to fit them for use as beads, and some of them were still in place on a fragment of cord. Doubtless all of them had formed part of the necklace.

Five pebbles, two of which were much polished on one side, lay together under part of an earthenware vessel.

With a burial were two vessels, one of which, a bowl, was inverted over a mass of what Dr. H. F. Keller has determined to be almost pure kaolin. This clay, no doubt, served as white paint, as we have pointed out elsewhere in this report.

Fifty-three vessels came from the mound at Douglas, taking into account all that were found, though many were crushed beyond restoration. The vessels present little variety of form and do not vary greatly in decoration.

Practically every bowl met with was inverted, as were some other vessels, but very exceptionally the bottles.

Some vessels were interesting as to apposition.

Vessel No. 45, a bowl, was inverted over a small bowl and a very diminutive bottle, both of which were lying on their sides.

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FIG. 41.—Necklace of beads of sheet-brass and bracelets of sheet-copper. With Burial No. 17. Douglas. (Full size.)

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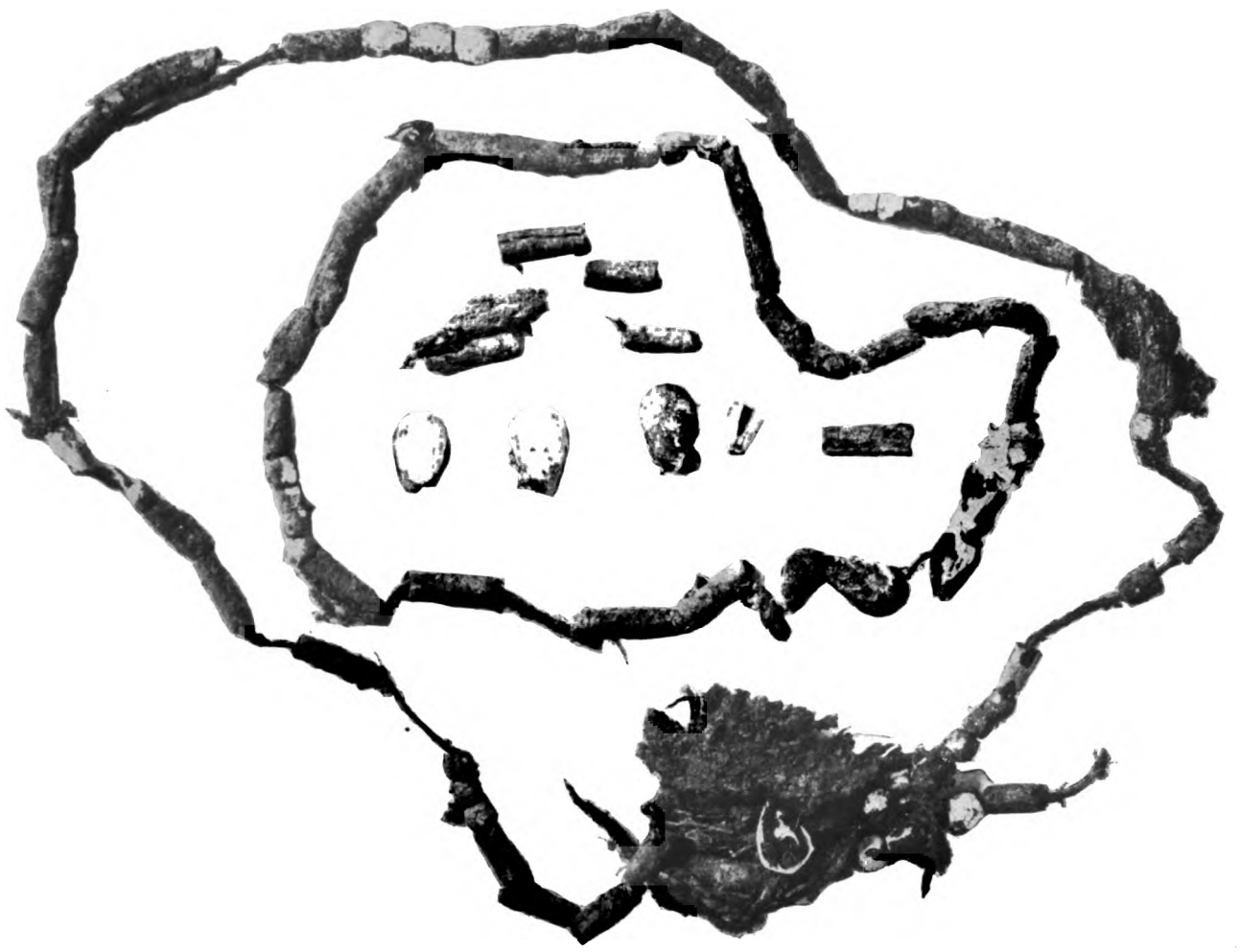

FIG. 42.—Beads of brass and of shell. With Burial No. 22. Douglas. (Full size.)

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A small vessel of the "teapot" variety had a small cup turned over the opening of the body.

We give in detail descriptions of more noteworthy vessels found in the mound near Douglas.

Vessel No. 22. This bowl of gray ware (Plate XVIII) has the usual band of red pigment on the upper portion, inside and out. Interiorly is a combination of festooned bands, three bands on each of the four sides, probably sun-symbols.[1]

FIG. 43.—Vessel No. 7. Douglas. (Diameter 7.5 inches.)

Vessel No. 7, a bowl of yellow ware with the usual marginal decoration of red paint on both sides (Fig. 43), has, in the interior, a design somewhat resembling a pair of antlers, perhaps an attribute of the horned serpent.

Vessel No. 17 is a bowl similar to the one just described with the exception that the lower, interior decoration is a cross of the four directions, with equidistant projections downward from the encircling marginal band—perhaps subdivisions of the four directions (Fig. 44).

[1] C. C. Willoughby, *op. cit.*, p. 13.

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CERTAIN MOUNDS OF ARKANSAS AND OF MISSISSIPPI.
NEAR DOUGLAS, VESSEL NO. 22. (FULL SIZE.)

COCKAYNE, BOSTON.

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FIG. 44.—Vessel No. 17. Douglas. (Diameter 6.4 inches.)

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Vessel No. 50 is a bowl of yellow ware having a solid coating of red on the inside. In place of the usual head derived from life is a blunt-pointed handle turning inward, having a perforation. On the opposite side is the usual conventional tail (Fig. 45).

Vessel No. 3 is a small vessel with four equidistant protuberances around the rim, resembling the well-known loop-handles so often found in southern United States. In this case, however, two of these protuberances have been perforated after the baking of the clay, for purpose of suspension, while the other two remain solid. For decoration, this bowl has an interior coating of red paint, and a band of red pigment surrounding the upper, outer part.

Vessel No. 15 is a bowl of excellent, dark, smooth ware, with incised decora-

FIG. 45.—Vessel No. 50. Douglas. (Diameter 5.6 inches.)

tion, shown in Fig. 46, in which the meander and the discs, which are probably sun-symbols, have a conspicuous place. Red pigment has been used in the lines of the upper, or flaring, part of the outside of the bowl, while white pigment appears exteriorly in the decoration of the body of the vessel.

Vessel No. 1, a bottle of light yellow ware, 8.2 inches in height, has a globular body, which, including the neck, has a beautifully polished, even coating of red pigment.

Many bottles of this class, though with the color less excellently preserved, were found by us in the lower Arkansas region, but they will not be described particularly unless offering some point of divergence.

Vessel No. 79 is a bottle only 2.8 inches in height, evenly coated with red paint. This toy, as might be supposed, lay with the skeleton of an infant.

Vessel No. 30. This beautiful vessel (Plate XIX) has an even coating of cream-colored pigment on the outside, and of carmine over the entire interior.

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CERTAIN MOUNDS OF ARKANSAS AND OF MISSISSIPPI.
NEAR DOUGLAS, VESSEL NO. 30. (FULL SIZE.)

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We are unable to say with certainty just what this vessel represents; whether it is modeled after a section of a gourd or is a conventionalized shell-form. On each of the four[1] vessels found by us is a protuberance opposite the projecting part, which part, in the case of a shell, would represent the beak; or the neck in the case of a gourd. In conventionalized shell-forms which we have seen, where the conch (*Fulgur*) drinking-cup is represented, there is a group of knobs around a central protuberance.

On the other hand, nearly all gourd-vessels have a depression in place of a knob, and rightly so since the depression represents the actual one seen on that part of the gourd which is opposite the neck. *Per contra*, as we have pointed out in this paper, vessels unmistakably representing gourds sometimes have a knob in place of a depression.

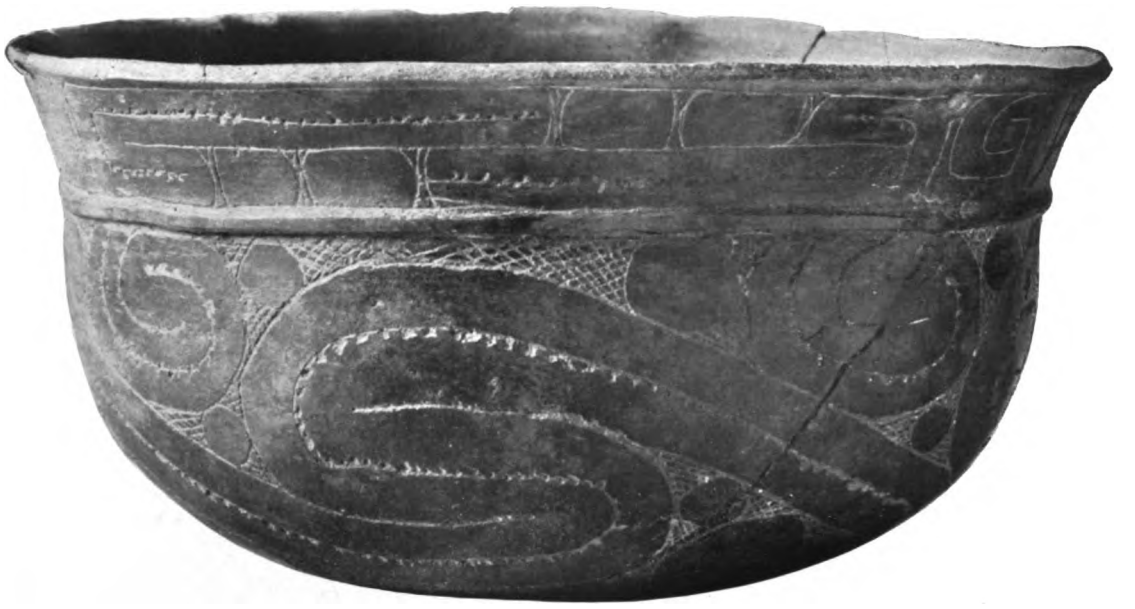

FIG. 46.—Vessel No. 15. Douglas. (Diameter 5.8 inches.)

Vessel No. 51, a diminutive "teapot" of dark ware, was found with part of a small boat-shaped vessel inverted over the opening in the body.

Vessel No. 32, a "teapot," has the spout and knob surrounded by circles of white pigment. On the two other sides of the vessel are round markings in white enclosed in circles of red with small, intervening, circular spaces of the yellow of the ware, as shown in Plate XX.

Vessel No. 21 is also a "teapot" but somewhat larger than the one just described. It is decorated in the same manner, with the addition of some black pigment that has been present on the basal portion, but which is now hardly more than a stain.

[1] There were found by us along the Arkansas river four such vessels, differing only in size, with a single exception. The knob on one of the vessels is surrounded by four small, incised, concentric circles.

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CEMETERY NEAR GREER, JEFFERSON COUNTY.

Greer, a small settlement, is on the right bank of the Arkansas river, going up, 27 miles by water above the city of Pine Bluff. At Greer is the plantation of Mr. G. B. Greer, five or six thousand acres in extent. After considerable bargaining with this gentleman, carried on through his son, we acquired the right to dig on the plantation.

On the Greer estate is an aboriginal mound that has been used as a cemetery in recent times, and which is covered with tombstones and is carefully fenced in.

In the field surrounding the mound were many signs of aboriginal occupancy, such as bits of pottery; arrowpoints of chert, broken as a rule; pebbles; chips of chert, etc. The canine tooth of a large carnivorous animal, and a small and neatly made "celt," lay upon the surface, as did also a small ornament, probably of sedimentary rock, with a cutting edge at one end and a hole for suspension at the other (Fig. 47).

FIG. 47.—Pendant. Greer. (Full size.)

Investigation was carried on by sinking trial-holes and trenches where signs of occupancy seemed most promising, and then by digging throughout the area where burials were encountered.

Most of our successful digging was done in two small areas, one about 40 yards in a southerly direction from the mound; the other about 30 yards northeast of it, where burials were found in considerable numbers, eighty in all being encountered, twenty of which were of infants and of older children.

These burials, none of which was more than 2 feet from the surface (few attaining that depth), consisted, as a rule, of skeletons at length on the back and of those in a flexed position.

There occurred, in addition, a number of times, three rather unusual forms of interment which, however, are modifications of the same form, namely:

1. Where the trunk lay upon the back, the thighs raised upward and parted somewhat, with the legs bent back on the thighs.

2. The trunk on the back, the thighs widely separated and drawn up, the legs flexed against the thighs.

3. The thighs and legs in the position just described with the trunk bent forward, sometimes to such an extent that the skull touched the pubic part of the pelvis, and sometimes so that the cranium rested to one side of the pelvis.

These forms were encountered ten times in all: once in the site southward from the mound, and nine times in the area northeast of it, though about the same number of burials was present in each site.

But one bunched burial was found at Greer, and this one unmistakably was of the bunched variety, inasmuch as some long-bones belonging to at least three skeletons were neatly piled, parallel—with but one skull, however, which lay beneath the pile.

There were present also disturbances in which bones had been disarranged by

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the aborigines when making other burials; and there were, of course, many burials that had been disturbed by the plow.

Fire had been employed but once. A skeleton lay in order down to the upper part of the thorax, unaffected by heat. From this point downward were charcoal and fragments of bones, including parts of the lower long-bones, some of which were burned considerably, but were not calcined.

Most of the bones at Greer were in better condition than we have been accustomed to find them, some skulls being saved. Nearly all the skulls and fragments of skulls showed antemortem compression, though there were exceptions to this rule.

Burial No. 59 at Greer has been referred to in the introductory portion of this report. Many long-bones of this skeleton, which show marks of a specific disease, were sent to the United States Army Medical Museum, while the skull is at the United States National Museum and is included in the report by Doctor Hrdlička. This burial was 2 feet below the surface. The skeleton was partly flexed on the right side, a distinctly aboriginal form of burial. There were no artifacts with it, but it lay among burials which had them.

Not many feet from Burial No. 59 were recent burials in coffins, doubtless the remains of negroes, former laborers on the plantation.

We do not believe, however, that under the circumstances as we have given them, there can be any ground to suppose that Burial No. 59 can have been recent.

But few artifacts, with the exception of pottery, lay with the dead.

A neatly made "celt," rounded at one end, after the southern fashion, lay near a burial. This implement we presented to a visitor.

There were also, associated with human remains: a few shell beads in several instances; several tines of deer-horn, each showing marks of separation from the antler by the aid of a cutting-tool; a piercing implement of bone with the articular part remaining; two implements (found separately) similar in every respect to the last, with the exception that the points are blunt and rounded—seemingly just fitted to make broad lines on clay previous to firing; three fragmentary teeth found together, probably incisors of the beaver; a number of lanceheads and knives, of chert; and a small and beautifully-made double-pointed implement of chalcedony.

With a burial were a number of tubular beads of sheet-copper, with overlapping edges, which had stained bright green a cervical vertebra and the chin. Some of these beads, analyzed by Dr. H. F. Keller, proved to be of the purest copper, as we have related in the early part of this report, a copper far too pure to have been obtained from Europeans, whose supply was derived from impure, sulphide ores.

In the soil, but not associated with burials, were the usual hammer-stones, broken and whole; also chisels and cutting implements, some wrought from chert pebbles; a small disc, probably of fine-grained sandstone; and a piercing implement of bone, with a perforation at the blunt end.

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Throughout the investigation at Greer 160 vessels of earthenware were found, or an average of exactly two to each burial.[1]

Only a few burials were without a mortuary deposit of vessels, ranging from one to five in number. These vessels were found, not in a great majority of instances near the skull, as was the case in sites farther down the Arkansas river, but arranged variously. Sometimes vessels lay near the skull, in one instance the head being entirely surrounded with them, or again vessels were found along the arm, near the thighs, at the knees, or at the feet. For example, Burial No. 7, a skeleton lying partly flexed on the left side, had at the right shoulder a water-bottle, another vessel at the elbow, and a bowl at the feet.

Burial No. 61, a skeleton having the lower extremities extended and the head and trunk flexed over and turned to the right, had, under the skull, a bowl containing a smaller bowl; at the elbow, a bottle; over the left knee, a bowl; at the right thigh, a large bowl with a smaller bowl somewhat above it.

But few vessels at Greer had been placed in the ground, inverted.

In certain respects the earthenware found at Greer differs from that met with by us farther down the river. The use of red paint as a coating for vessels was exceptional in this cemetery, while decoration made up of red designs and white designs in combination was found but twice, though red pigment appears in a number of instances worked into the lines of incised decoration.

But one vessel of the "teapot" variety was met with at Greer, and this vessel was found with a burial at a distance from the two sites whence all the rest of the pottery was taken.

The ware from Greer is largely dark, not highly polished, and, when decorated, bears in almost every instance a scroll decoration made up of broad, trailed lines, and offering little variety of combination. The majority of the ware is undecorated and of inferior quality, especially that placed with the bodies of children, a rather exceptional circumstance, for the aborigines, as a rule, were liberal when interring their little ones. As usual, vessels with children's remains were small in keeping with the size of the departed.

In many of the vessels were large musselshells, too fragmentary for identification, as a rule, though in one case Dr. H. A. Pilsbry has identified one to be *Lampsilis purpuratus*.

Red pigment was found in several vessels. We have already quoted (page 484) the analysis by Dr. H. F. Keller of red ocher from this place.

Part of a rude smoking-pipe of earthenware was found in the soil, apart from human remains.

We shall now describe the vessels from Greer, which merit particular notice.

[1] In this enumeration all vessels have been scored, whether whole, partly broken or hopelessly crushed by the plow (the last two classes greatly predominating), our object being to ascertain as nearly as possible the number originally placed with the dead, though, of course, owing to the destruction of the human remains and of vessels through cultivation of the field, it was impossible to do this with exactness.

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Vessel No. 100 is a shallow bowl of dark ware (Fig. 48), having as decoration, incised over the entire base, an interesting form of the swastika—a variety found in the United States and in Central America.[1]

Professor Holmes has kindly prepared for us the following note[2] on this form of swastika:

FIG. 48.—Vessel No. 100. Greer. (Diameter 6.4 inches.)

"With regard to the device engraved on the bottom of the earthen bowl, you will remember that it occurs on engraved shells and in various degrees of convention on the stamped earthenware of the Southern States. It is also a very general

[1] Thomas Wilson, "The Swastika," Rep. U. S. Nat. Mus., 1894, p. 902.

[2] See, also, William H. Holmes, "On the Origin of the Cross Symbol," Proc. Am. Antiq. Soc., Oct. 24, 1906.

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occurrence on the pottery of the ancient Pueblos—especially the cliff dwellers. The design is merely a form of the cross popularly known as the swastika. The cross in all of its forms is a cosmic symbol representing the world (the primitive universe), the division into four (north, south, east, west) being the convenient means of locating the groups of deities to which offerings and appeals had to be made. We may thus regard it as the symbol not so much of the universe itself, as of all the vast number of deities, powers, and agencies of good and evil supposed by aboriginal peoples to occupy the four quarters of their world."

FIG. 49.—Swastika, a stamped decoration on South Apalachian ware. (Holmes.)

In Figs. 49, 50, 51, 52, are shown illustrations suggested by Professor Holmes in connection with his remarks.

Vessel No. 56. This beautiful bottle of dark ware, having an oblate-spheroidal body and flat base (Fig. 53), bears an incised decoration on two sides, showing a swastika of a variety akin to the one seen on Vessel No. 100. Between the two crosses is a minor decoration, probably added to fill space. Still remaining in the incised lines are traces of red pigment.

Vessel No. 111. This bottle, of hard, yellow ware, with a flat, annular base (Fig. 54), has, in trailed, broad lines, a swastika decoration of the same class as the two already described.

Vessel No. 64, which in reality is but the basal part of a vessel, evidently bore, when entire, an incised decoration in which a swastika similar to those just mentioned, formed a part. As much as was found of this vessel is shown in diagram in Fig. 55.

FIG. 50.—Shell gorget with swastika decoration. (Half size.) (Holmes.)

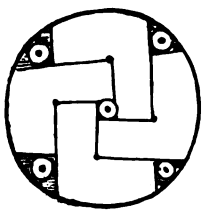

FIG. 51.—Swastika. (Holmes.)

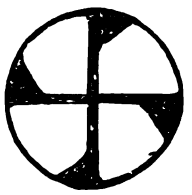

FIG. 52.—Swastika. (Holmes.)

Vessel No. 48. This vessel, of dark ware, polished (Fig. 56), in shape, we believe, differs from any hitherto described as coming from the middle Mississippi region. In form it resembles a saucer with a perforated, trun-

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FIG. 53.—Vessel No. 56. Greer. (Height 8.6 inches.)

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cated cone as a support, and recalls to some extent the basal part of certain bottles from the region in question. This vessel is without decoration.

Vessel No. 51 belongs to the same class as that just described, but differs from it in that the support has a greater number of perforations and the vessel bears incised decoration. Around the lower part of the support is an encircling, incised line, in connection with which are oblique, parallel, incised lines (Fig. 57).

FIG. 54.—Vessel No. 111. Greer. (Height 4.8 inches.)

The interior of the upper part bears an interesting, incised decoration (Fig. 58), in relation to which, and to the decoration on the two vessels described after this one, we have consulted with Mr. Charles C. Willoughby,[1] for whose assistance in this matter we wish to express our thanks.

The central figure, of course, is the cross of the four directions, while the cross-

[1] The reader is referred also to Mr. Willoughby's paper, "An Analysis of the Decorations upon Pottery from the Mississippi Valley," Journal of American Folk-Lore, Vol. X, 1897.

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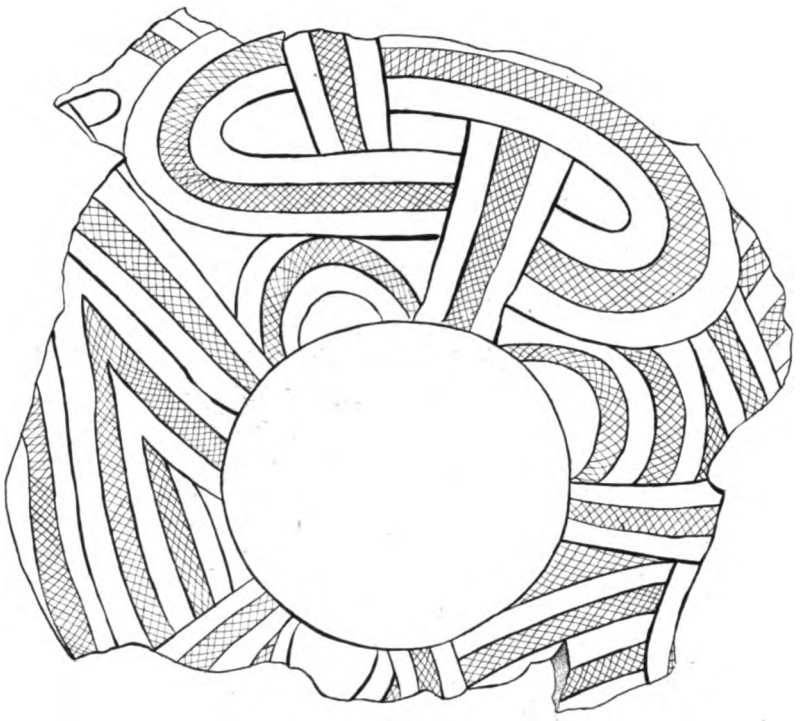

FIG. 55.—Vessel No. 64. Greer. Decoration. (Half size.)

FIG. 56.—Vessel No. 48. Greer. (Diameter 6 inches.)

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hatch figure is a swastika. Mr. Willoughby thinks the four circles near the edge in this decoration are analogous to the four circles common to similar designs in which each of the circles surrounds a cross that has within each of the four spaces formed by its arms, a small circle surrounding a dot.

Mr. Willoughby does not believe that the cross-hatch near the edge and around the circles in the design figured by us forms a special design, but rather is used as a back-ground.

Vessel No. 79. We have here part of another vessel (Fig. 59) of the same type as the two just described. Red pigment remains in the lines of the incised decoration. This decoration, partly restored, is shown in diagram in Fig. 60.

FIG. 57.—Vessel No. 51. Greer. (Diameter 6.3 inches.)

Mr. Willoughby thinks, but does not feel sure, that the central design is made up of serpents' tails with rattles. If such be the case, the rattles are represented by the cross-hatch design. The remainder of the decoration on this vessel much resembles that on Vessel No. 51, with the introduction, however, of four additional circles.

Vessel No. 17. This saucer-like vessel of dark, smooth ware (Fig. 61), has a most interesting, engraved decoration covering its entire outer surface, which probably represents various parts of the serpent. The central design is formed of four tails, showing the rattles. The four lobes surrounding the inner circle and forming a cross, are serpents' mouths, showing their teeth. The smaller circles probably represent the eyes.

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In some of the outer semicircles the serpents' teeth appear again, and we believe it likely that the dentate, cross-hatch figures represent crests of the crested serpent, as similar designs are seen on representations of winged and crested serpents, and appear again and again through every form of convention down to the simple scroll.[1]

Mr. Willoughby says: "The complete design seems to me to be analogous to

FIG. 58.—Vessel No. 51. Decoration.

that of a certain type [2] of shell gorgets, which I always believed represented a serpent.

"It is possible that the small circles in all these designs are eyes. It is inter-

[1] C. B. Moore, "Moundville Revisited," Journ. Acad. Nat. Sci., Phila., Vol. XIII, Figs. 65 to 73, inclusive.

[2] W. H. Holmes, "Art in Shell," Second Ann. Rep. Bur. Am. Ethnol., Pls. LIV, LV, LVI.

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FIG. 59.—Vessel No. 79. Greer. (Diameter 6 inches.)

FIG. 60.—Vessel No. 79. Decoration. (Two-thirds size.)

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esting to note that in the painted designs of the Northwest Coast Indians, eyes nearly always appear at the principal joints of the body. They also appear at the joints of certain gods of the Mexican Indians,[1] and I think that the circles shown at some of the joints in the serpent god of the Cincinnati tablet [2] also represent eyes."

Mr. Willoughby thinks it probable that the complete designs on the three vessels just described represent serpents or serpents combined with cosmic elements.

FIG. 61.—Vessel No. 17. Greer. (Diameter 5.3 inches.)

"The supreme power of the heavens exemplified by the lightning," says Mr. Willoughby, "symbolized by the serpent, is so closely associated with the clouds, wind, rain, water, the four directions, as well as the horizon, that where the representation of one occurs, others are likely to be found. I think that the swastika on Vessels Nos. 51 and 79, while it may refer to the serpent, also denotes the winds."

[1] See Zelia Nuttall, "The Book of Life of the Ancient Mexicans," pp. 76, 79, etc.

[2] The reader is referred to F. W. Putnam and C. C. Willoughby, "Symbolism in Ancient American Art," Proc. A. A. A. S., Vol. XLIV, 1896.

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Vessel No. 13. In Fig. 62 is shown a bowl of dark ware, with a scroll design formed by a combination of broad, trailed lines, a design resembling very many found near Greer. A feature of this vessel, however, is that on two opposite sides of the opening are projections, each containing a longitudinal perforation for suspension.

Vessel No. 34 is a wide-mouthed bottle of dark ware (Fig. 63), the body an oblate sphere, the neck slightly flaring and surrounded at the junction with the body by a band in relief, ornamented with incised chevrons. The decoration is largely a scroll design somewhat similar to many found near Greer.

FIG. 62.—Vessel No. 13. Greer. (Diameter 6 inches.)

Vessel No. 135 is a wide-mouthed bottle (Fig. 64) of the same class as the one just described.

Vessel No. 150 is a broad-mouthed bottle of dark ware, with chevron decoration around the neck and a scroll decoration of broad, trailed lines on the body. A noteworthy feature about the bottle is that on two opposite sides are holes for suspension.

Vessel No. 119 is a bottle of dark ware (Fig. 65), with neck, first upright, then flaring. The decoration is similar in the main to that on other vessels from this place.

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FIG. 63.—Vessel No. 34. Greer. (Diameter 6.5 inches.)

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FIG. 64.—Vessel No. 135. Greer. (Height 7 inches.)

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FIG. 65.—Vessel No. 119. Greer. (Diameter 5.5 inches.)

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Vessel No. 10 is a well-made bottle with the usual scroll and attendant decoration (Fig. 66).

Vessel No. 61 has been a large effigy of a quadruped, supported on four legs and painted a brilliant red. Unfortunately, the head and back (and probably

FIG. 66.—Vessel No. 10. Greer. (Height 7.5 inches.)

a neck, as the effigy was most likely a bottle) have been carried away by the sweep of a plowshare. Vessels of a type presumably similar to this one are figured by Holmes[1] and by Thruston.[2]

[1] Twentieth Ann. Rep. Bur. Am. Ethnol., Pl. XXVf.
[2] "Antiquities of Tennessee." Fig. 46; also Pl. IX.

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Vessel No. 45 is a bowl of dark ware (Fig. 67), in shape an inverted, trun-

FIG. 67.—Vessel No. 45. Greer. (Diameter 7 inches.)

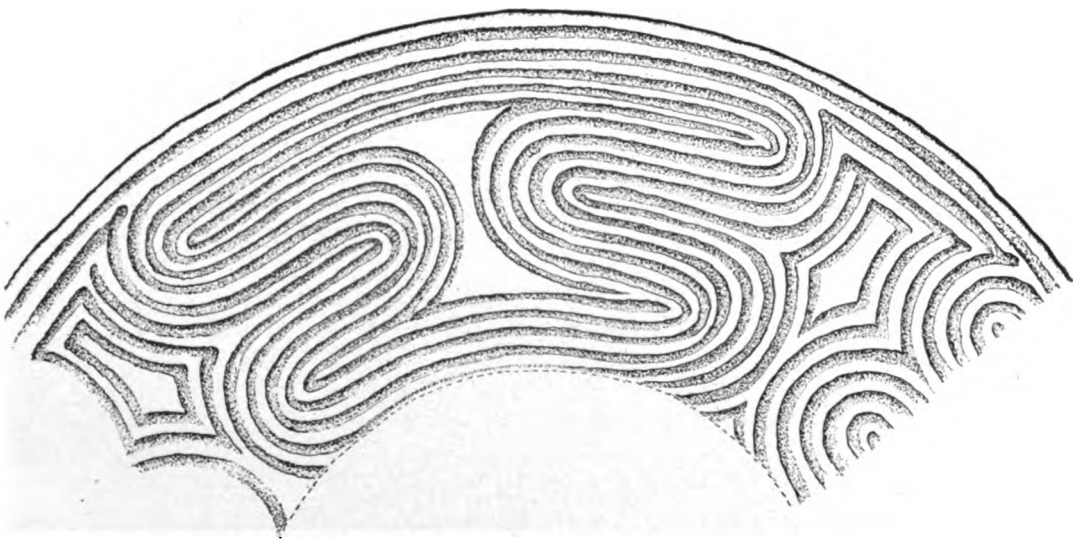

FIG. 68.—Vessel No. 45. Decoration. (Half size.)

cated cone, with a graceful decoration of broad, trailed lines (Fig. 68), shown twice on the outer surface. On the base is a swastika that had become so indistinct

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through wear that it was necessary to outline it with chalk for purposes of photography.

Vessel No. 120 is a bowl of excellent, dark ware (Fig. 69), having on the upper part an incised decoration in which remain traces of red pigment.

FIG. 69.—Vessel No. 120. Greer. (Diameter 7.2 inches.)

FIG. 70.—Vessel No. 106. Greer. (Diameter 9.3 inches.)

Vessel No. 106 is also a bowl of dark ware, with an incised decoration that at one time has had a deposit of red pigment in the lines (Fig. 70).

Vessel No. 121 is a wide-mouthed bottle of dark ware, having a body globular with extended flat base, and a neck first upright, then flaring (Fig. 71). The decoration, which is incised, is made up of bands of reticulated lines, most of which unite in forming a scroll effect. As was almost invariably the case in the cemetery near

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Greer, red paint is an adjunct to the incised decoration, which, incidentally we may say here, was not employed when the decoration consisted of broad, trailed lines.

Vessel No. 112 is a wide-mouthed bottle of dark ware, with a body having an extension ending in a flat base (Fig. 72). The decoration, incised, with the usual traces of red pigment, is made up of a combination of spaces filled with reticulated lines.

Vessel No. 30 is a bowl of coarse, yellow ware, having an almost indistinguishable decoration on the lower part. The upper part, exteriorly, bears an incised and punctate design in which the scroll has a prominent place (Fig. 73).

FIG. 71.—Vessel No. 121. Greer. (Diameter 6.75 inches.)

Vessel No. 8 is a cooking vessel of yellow ware, with soot still adhering (Fig. 74). The decoration of trailed lines and punctate markings shows scrolls, concentric circles (probably sun-symbols), and diagonal, parallel lines.

Vessel No. 37. This interesting little vessel (Fig. 75) is a reproduction in earthenware of one of the musselshells (*Unio*) found in the Arkansas and White rivers. We do not recall having seen before the musselshell represented in earthenware, though the conch and the clam figure in the pottery of the middle Mississippi region.

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FIG. 72.—Vessel No. 112. Greer. (Diameter 7.7 inches.)

FIG. 73.—Vessel No. 30. Greer. (Diameter 5.6 inches.)

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Vessel No. 110 is a bowl of yellow ware (Fig. 76), having as decoration a

FIG. 74.—Vessel No. 8. Greer. (Diameter 6.5 inches.)

band of red pigment on both sides, extending somewhat below the rim. In the interior are four series of double, crescentic bands executed in red paint. Centrally, is a frog shown in red paint, the representation of which, however, is somewhat marred through the effect of heat, the outside of the vessel and the central part of the interior having been discolored by fire.

It is interesting to note that a vessel found by Doctor Hough[1] in northeastern Arizona, bears a frog painted on the base of the interior. "The frog is a symbol of water," says Doctor Hough, "and its symbolic use is widely diffused in the Pueblo region, carved in shell, formed in clay, worked in turquoise mosaic or painted on pottery."

The frog shown by Doctor Hough is tailless, while the frog on the vessel from Greer bears a well-developed tail.

FIG. 75.—Vessel No. 37. Imitation of musselshell. Greer. (Full size.)

[1] Walter Hough, "Archæological Field Work in Northeastern Arizona," Smithsonian Report, 1901, p. 315, Pl. L.

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It is well known that in the tadpole state the incipient frog has, at the same time, both tail and legs, which fact, no doubt, caused the aboriginal artist to portray on our bowl a frog with marked caudal development.

Here again, however, we can find a parallel in the Southwest. Doctor Fewkes[1] describes and figures as coming from the ancient Pueblo of Sikyatki, in

FIG. 76.—Vessel No. 110. Greer. (Diameter 13.5 inches.)

northeastern Arizona, a painted representation of a frog bearing a tail of considerable size.

Vessel No. 32, a bowl of yellow ware (Fig. 77), has an interior coating of red pigment and an exterior band of the same material extending somewhat below the

[1] J. W. Fewkes, "Archæological Expedition to Arizona in 1895," Seventeenth Ann. Rep. Bur. Am. Ethnol., Part II, p. 677, Pl. CXXXIIf.

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rim. On opposite sides are an effigy of the human head and a conventional tail.

Vessel No. 55, also a bowl of yellow ware, much the worse for ravages of time, has had an interior coating of red pigment that has almost entirely disappeared. On the outside are traces of the usual band of red paint below the margin. On one side is the head of an unidentified animal with conspicuous ears erect, protruding eyes, and partly open mouth showing the teeth (Fig. 78). On the opposite side a tail curves first upward, then inward.

FIG. 77.—Vessel No. 32. Greer. (Diameter 7.3 inches.)

Vessel No. 9 is a bottle of yellow ware, found in many fragments through contact with a plow, the neck being entirely gone. This bottle has been cemented together with considerable restoration as to the body and complete restoration of the neck (Fig. 79). The design varies somewhat from that on any other vessel found by us along the Arkansas river, though it is of the same general character. Partly interlocked scrolls of white and of red form the decoration, the scrolls having fenestrated ends filled with color—the white scrolls with red, the red scrolls with white. As the paint formerly on this bottle has been considerably worn away, we have attempted in the figure to show the design as it originally appeared, the dark shade representing red; a lighter shade showing the yellow of the ware; the white, of course, being represented without color.

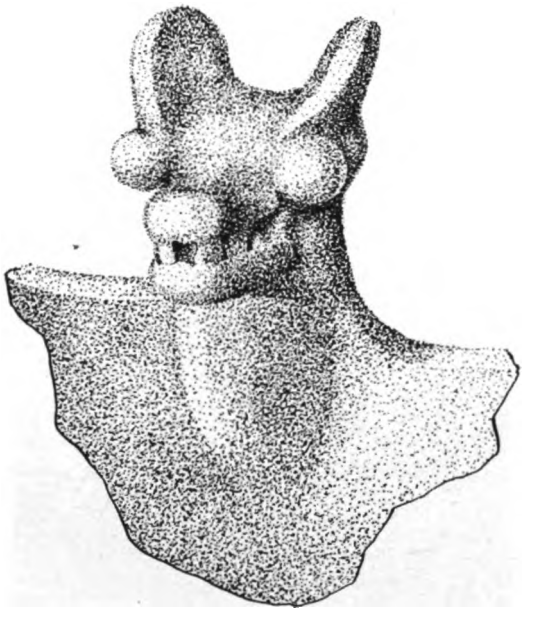

FIG. 78.—Vessel No. 55. Greer. (Full size.)

Vessel No. 136. This small vessel, with rounded base and square in upper, horizontal section, is undecorated and is worthy of note only on account of its quadrangular form which, as has often been remarked, is unusual though of widespread occurrence.

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FIG. 79.—Vessel No. 9. Greer. (Height 9 inches.)

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The Toltec Mounds, Lonoke County.

These mounds, near Toltec station, on the railroad, about sixteen miles below the city of Little Rock, are described as the Knapp Mounds in the Twelfth Annual Report of the Bureau of American Ethnology,[1] as doubtless they were called at the time of the publication of the Report.

The mounds were visited by us, but investigation was not deemed advisable, as there seemed to be no history of the discovery of artifacts in the vicinity.

Little Rock.

In the State-house at Little Rock, the capital of Arkansas, we examined a small case of earthenware vessels said to have been found in the neighborhood of the city.

One of these vessels, of the "teapot" variety, bears a human face on one side, well modeled in relief, and is one of the most interesting vessels from Arkansas that we have seen.

Since our return, we have tried without success, to obtain from the officials at the State-house a photograph of this vessel for reproduction.

[1] Page 243 *et seq.*

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REPORT ON A COLLECTION OF CRANIA FROM ARKANSAS.

(Made, and donated to the National Museum, by Mr. Clarence B. Moore.)

By Aleš Hrdlička.

(In charge of the Division of Physical Anthropology, U. S. National Museum.)

The collection in question consists of twelve more or less perfect skulls, four of which are marked as coming from "near Menard mound, Arkansas Co., Ark.," while six were exhumed "near Greer, Jefferson Co.," the same State.

All the specimens present about the same degree of conservation. They are all of much the same yellowish color, fragile, largely devoid of animal matter, but not mineralized. Two of the skulls are represented by the frontal bone only, and of the others three lack the lower jaw. Their original and Museum numbers, with identification as to sex and estimate of the age of the individuals, are as follows:

Menard Skulls.

Orig. No.	Museum No.	Sex.	Approximate age of person.
————	249,914	male	55–60 y.
"Burial 10"	249,915	male	50–60 y.
" 86	249,916	female	30–35 y.
————	249,917	female	adolescent.

Greer Skulls.

"Burial 6"	249,918	female	35 y.
" 60	249,919	male	55–60 y.
" 7	249,920	female	40 y.
" 43	249,921	male (?)	35 y.
" 12	249,922	female (?)	45 y.
" 59	249,923	female	35 y.
" 32	249,924	female	40 y.
" 53	249,925	female	35 y.

Several of the skulls show signs of injury in life, or of disease. Thus, in 249,915 (Menard), a hyperostosis of the plate that forms its floor occludes entirely the right external auditory meatus, while on the left side there is a similar condition in an advanced stage; in 249,919 (Greer), there are three scars of old lesions of unknown nature, one, of moderate size and irregular form, anteriorly near the right frontal eminence, a trace of a similar one in nearly the same location on the opposite side, and a large scar over the upper third of the right parieto-occipital articulation; in No. 249,920 (Greer), there is a larger (3 x 2 cm.) scar, resembling in nature those in the preceding case, on the left frontal eminence; in No. 249,921 (Greer), a large symmetrical area over the top and back of each parietal shows

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signs of prolonged congestion, resulting in slight hyperplasia of the surface bone layer; finally, No. 249,922 shows an old scar in the large inion depression which exists in this case, and in one part of this scar the bone is perforated, the irregular opening measuring 6 x 5 millimeters. All these scars suggest syphilitic lesions, but they are all healed and there is a total absence of the characteristic syphilitic ulceration of the bone. Besides the just mentioned conditions, it is noticeable that dental caries was more prevalent than is usual among the Indians.

Three of the Menard and three of the Greer crania show various degrees of artificial, intentional deformation of the "flathead" type, and one additional Greer skull (249,922) presents a lateral occipital flattening. Specimens 249,917, '20, '21 and '23 are free from deformation; in 249,915 and '925 the frontal compression is of so light a grade that it does not affect materially the general shape and measurement of the skulls.

Anomalies of structure are observable in a number of cases, those more worthy of mention being as follows: An epactal bone, 4.3 x 9.9 cm. in surface measurements, exists in 249,920; and there is, in 249,918, a somewhat rudimentary atlas, with complete neural arch, fused entirely with the occipital.

The anthropological characteristics of the skulls from the two localities are found on examination to be practically identical. They are so close that there is a strong probability of their proceeding not only from the same general type, but even from the same tribe of people, and they can be legitimately dealt with as one group only.

Measurements and Description.

Form.—The undeformed skulls of this collection are all decidedly brachycephalic, and several of the deformed specimens give plain indication that they belong to the same type. The skulls are also all relatively high. The individual measurements and indices showing these conditions are as follows:

Measurements of the Crania Relative to their Shapes.

Museum Number	Sex	Diameter antero-posterior maximum	Diameter lateral maximum	Basion—bregma height	Cephalic index	Height—length index	Height—breadth index
		cm.	cm.	cm.			
249,915	Male	17.8	15.4	14.3	*86.5*	*80.3*	*92.9*
249,919	Male	16.5	14.8	14.6	*89.7*	*88.5*	*98.6*
249,920	Female	16.2	14.5	13.9	*89.5*	*85.8*	*95.9*
249,921	Male (?)	17.2	14.5	14.15	*84.3*	*82.3*	*97.6*
249,923	Female	16.5	14.3	13.7	*86.7*	*83.0*	*95.8*
249,925	Female	15.7	13.9	13.6	*88.5*	*86.6*	*97.8*

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Size.—The skulls under examination are all of rather low capacity, when compared with whites, but can not be said to be exceptional for Indians, particularly for those of moderate stature, which in this case is indicated by the usual small lumen of the foramen magnum, as well as by a few of the long-bones sent by Mr. Clarence B. Moore to the Army Medical Museum (a right male femur among these measures 41.1 cm.). The next table gives a number of determinations which have relation to the size of the skulls; it will be seen that it is of importance to learn, in connection with the external measurements, also the approximate thickness of the bones that form the cranial vault, to be enabled to judge with some accuracy as to the capacity. The thickness of nearly all of these skulls is above the average in whites, though agreeing with that usual in the Indian.

MEASUREMENTS OF THE CRANIA RELATIVE TO THEIR SIZE.

MUSEUM NUMBER	Sex	Capacity in c.c. (writer's method)	Cranial module (=mean diameter)	Circumference (above supraorbital ridges)	Nasion—opisthion arc	Thickness of left parietal (above the squamous suture)
		c.c.	cm.	cm.	cm.	mm.
249,915	Male	1425	15.83	51.8	34.5	6–7
249,919	"	1345	15.30	49.9	33.8	4–6
249,921	" (?)	1260	15.28	50.7	35.2	6–7
249,922	Female (?)	1305	15.07	48.0	33.8	4–6
249,916	Female	1290	14.80	48.2	32.5	4–6
249,918	"	1170	NEAR 14.90	47.0	NEAR 33.3	6–7
249,920	"	1185	14.87	48.6	33.8	4–6
249,923	"	1250	14.83	49.1	33.9	4–6
249,924	"	1240	14.90	48.8	32.6	4–6
249,925	"	1140	14.40	46.3	32.3	3–4

The *facial parts* of these skulls gave measurements which are grouped in the next tables. It is seen that the upper facial height is in most of the instances quite considerable. This is due to a relatively great development in height of the upper alveolar process, which assumes really exceptional proportions in No. 249,916. The total facial height is less pronounced, due to a relative lowness of the inferior maxilla. The breadth of the face is throughout moderate. The nasal index is

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grouped about the boundaries of the lepto- and mesorhynic, the orbital index is variable, with a predominance in the undeformed skulls of the mesoseme. The prognathism is on the average only slightly greater than is usual among the Indians, but is excessive in two of the specimens (Nos. 249,916 and 249,924). The palate is predominantly brachyuranic (Turner). The angle of the lower jaw presents nothing unusual, with one possible exception (No. 249,921, abnormally large, if this skull is that of a male). The breadth as well as the height at symphysis of the lower jaw are both moderate in all the specimens.

MEASUREMENTS RELATIVE TO THE FACIAL PARTS.

MUSEUM NUMBER	SEX	Total height of the face	Alveolar point—nasion height	Diameter bizygomatic maximum	Facial index, total	Facial index, upper	Nose: Height (mean of that from nasion to the nasal notches)	Nose: breadth	Nose: index	Orbits: mean height	Orbits: mean breadth (Broca)	Orbits: mean index
		cm.	cm.	cm.			cm.	cm.		cm.	cm.	
249,915	male	12.4	7.7	14.6	*84.9*	*52.7*	5.45	2.75	*49.1*	3.40	4.50	*75.6*
249,919	"	?	?	14.5	?	?	5.00	2.50	*50.0*	3.20	3.85	*83.1*
249,921	" (?)	11.9	7.45	13.2	*90.1*	*56.4*	5.40	2.50	*46.3*	3.45	3.90	*88.5*
249,922	female (?)	12.0	7.35	13.2	*90.9*	*55.7*	5.05	2.30	*45.5*	3.50	4.05	*86.4*
249,916	female	13.2	8.05	12.7	*103.9*	*63.4*	5.20	2.45	*47.1*	3.65	3.70	(*98.6*)
249,918	"	11.6	7.1	13.7	*84.7*	*51.8*	4.90	2.50	*51.0*	3.30	3.75	(*88.0*)
249,920	"	?	?	?	?	?	?	?	?	?	?	
249,923	"	10.0	6.7	13.3	*81.9*	*50.4*	5.15	2.55	*49.5*	3.50	3.75	*93.3*
249,924	"	12.0	7.65	13.1	*91.6*	*58.4*	5.30	2.40	*45.3*	3.50	3.75	(*93.3*)
249,925	"	?	7.25	12.8	?	*56.6*	5.20	2.60	*50.0*	3.40	3.60	*94.4*

ADDITIONAL MEASUREMENTS RELATIVE TO THE FACIAL AND OTHER PARTS OF THE SKULL.

		PROGNATHISM						PALATE			LOWER JAW			FRONTAL BONE		
MUSEUM NUMBER	SEX	Basion—forepart of alveolar point (*a*)	Basion—nasion (*b*)	Angle between *a* and *b*	Basion—middle of nasal notches (*c*)	Height from alveolar point to middle of nasal notches (*d*)	Angle between *a* and *d*	External length (x)	External breadth (y)	Index $\left(\frac{y \times 100}{x}\right)$	Diameter bigonial	Angle (mean)	Height at symphysis	Diameter frontal minimum	Diameter frontal maximum	Foramen magnum: mean diameter
		cm.	cm.	degrees	cm.	cm.	degrees	cm.	cm.		cm.	degrees	cm.	cm.	cm.	cm.
249,914	male	?	?	?	?	?	?	?	?	?	?	?	?	ABOUT 10.0	(12.3)	?
249,915	"	10.7	11.4	*74.0*	9.8	2.10	*57.5*	5.8	NEAR 6.9	*119.0*	10.9	*116.5*	3.4	9.8	(12.3)	3.35
249,919	"	?	10.5	?	8.95	(1.95)	?	?	?	?	?	?	?	10.15	12.6	3.15
249,921	" (?)	10.2	10.5	*73.0*	9.0	2.20	*52.5*	5.8	6.9	*119.0*	11.0	*134.0*	NEAR 3.6	9.4	12.4	3.50
249,922	female (?)	10.2	10.6	*73.0*	9.15	2.45	*58.5*	5.75	6.6	*114.8*	9.6	*126.0*	3.5	9.4	11.6	3.00
249,916	female	10.4	10.0	*63.0*	9.0	2.85	*52.0*	6.2	7.1	*114.5*	9.9	?	?	9.85	(13.2)	3.05
249,917	"	?	?	?	?	?	?	?	?	?	?	?	?	9.2	11.8	?
249,918	"	?	?	?	?	2.30	?	5.6	6.9	*123.2*	10.0	*121.0*	3.25	8.8	(11.5)	?
249,920	"	?	9.8	?	?	?	?	?	?	?	?	?	?	8.9	11.95	2.90
249,923	"	9.4	9.9	*73.5*	8.5	1.75	*55.0*	5.35	6.8	*127.1*	10.1	*125.0*	3.15	9.4	12.4	3.30
249,924	"	10.6	10.2	*66.5*	9.3	2.35	*51.5*	5.8	6.65	*114.7*	9.8	*129.0*	3.5	9.2	(12.5)	3.25
249,925	"	10.0	10.15	*70.0*	9.0	2.10	*56.0*	5.6	6.55	*117.0*	?	?	?	9.1	11.5	3.25

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Descriptive Notes.—In the undeformed skulls, the forehead is generally well built; the sagittal region is anteriorly uniformly oval, or there is but a slight median elevation, while from the summit backward and particularly in the region of the obelion, a number of the specimens show a shallow median depression; the temporo-parietal region is convex, without bulging, and the parietal bosses are not pronounced; the occiput is also convex, without bulging, as it does in long crania. In several instances the locality of the inion, usually marked by a protuberance, presents a depression; this is especially marked in Nos. 249,918 and 249,922.

The supraorbital ridges are in all these crania less developed than usual, while the opposite is true of the mastoids, particularly those of the females, which are much above the average and could in most of the cases easily be taken for those of males.

The sutures show generally a submedium serration; obliteration is irregular in the different specimens, but in a number of instances is seen to have involved the coronal suture below the temporal ridges before it has advanced much in other localities. The pterions are all of the H form and mostly of fair width. Sutural bones are small and quite infrequent.

The nasion depression, due to the small supraorbital ridges, is generally more or less shallow; the nasal bridge is of but moderate height, especially in 249,925; the inferior borders of the nasal aperture are in most of the cases sharp, but in 249,918 they are dull, with moderate subnasal gutters, while in 249,923 they are dull and there are moderate subnasal fossæ. The spine, as usual in the Indians, is mostly of submedium dimensions as compared with that of whites.[a]

The malar bones and zygomæ are in all these specimens of only moderate strength and prominence. The canine, or submalar fossæ, are of medium development. The chin is generally of moderate protrusion; in 249,921, and especially in 249,915, it is square. The angles of the lower jaw are in no case prominent.

The base is characterized by small depression of the petrous bones, small middle lacerated foramina, and submedium to rudimentary styloids—all features common in Indians. In two of the ten skulls, in which the examination of the floor of the auditory meatus is possible, there is a small defect in the same—in 249,921 on the left, in 249,922 bilaterally.

The dentition has been found regular and complete in all cases where it was possible to examine the same, except in 249,919, where there are traces of one or possibly two rudimentary, supernumerary dental elements in the upper jaw on the right side. The teeth are in all cases of moderate size. The upper incisors, where preserved, show the pronounced ventral concavity, or shovel form, which is encountered in nearly all of the Indians. The cuspidary formulæ, so far as they could be ascertained, differed in no way from what is most usually found in the whites. The wear of the teeth is less than usual in other localities.

[a] This structure is subject to so much variation, and is so often damaged, particularly in old skulls, that the writer finds it impracticable to utilize it as the point from which the nasal height is to be measured, utilizing instead the mean of the lowest points on the border of the two notches of the nasal aperture.

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Deductions.—The collection of skulls described above, consists of one well defined type, characterized mainly by brachycephaly. There are, in addition, features which may be regarded as local or tribal modifications, connected probably in the main with the habits and environment of the people, consisting in more than usual development in height of the upper alveolar process, a considerable development of the mastoids in the females, and small development, in both sexes, of the supraorbital arches. The people were not tall in stature, and their food was not coarse.

The type of people indicated by the skulls prevailed at one time over a large part of the present State of Arkansas, and extended to the Gulf States. Its exact limits are as yet but ill defined. It stands in relation—regardless of the custom of head deformation—with a large contingent of the mound Indians, reaching well into Ohio. More distant peoples of fundamentally the same type are, on one hand, the brachycephals of the northwest coast, and, on the other, the people of Yucatan and parts of the eastern coast of Mexico. The southwestern brachycephals must also be borne in mind.

There are doubtless, in the Gulf States, yet living representatives of the type of people indicated by the Arkansas skulls here described. It exists to an unascertained extent among the Tonkawa. And the type is predominant, if not general, among the Choctaw. To learn its ancient distribution would be an important step in the anthropology of this country.

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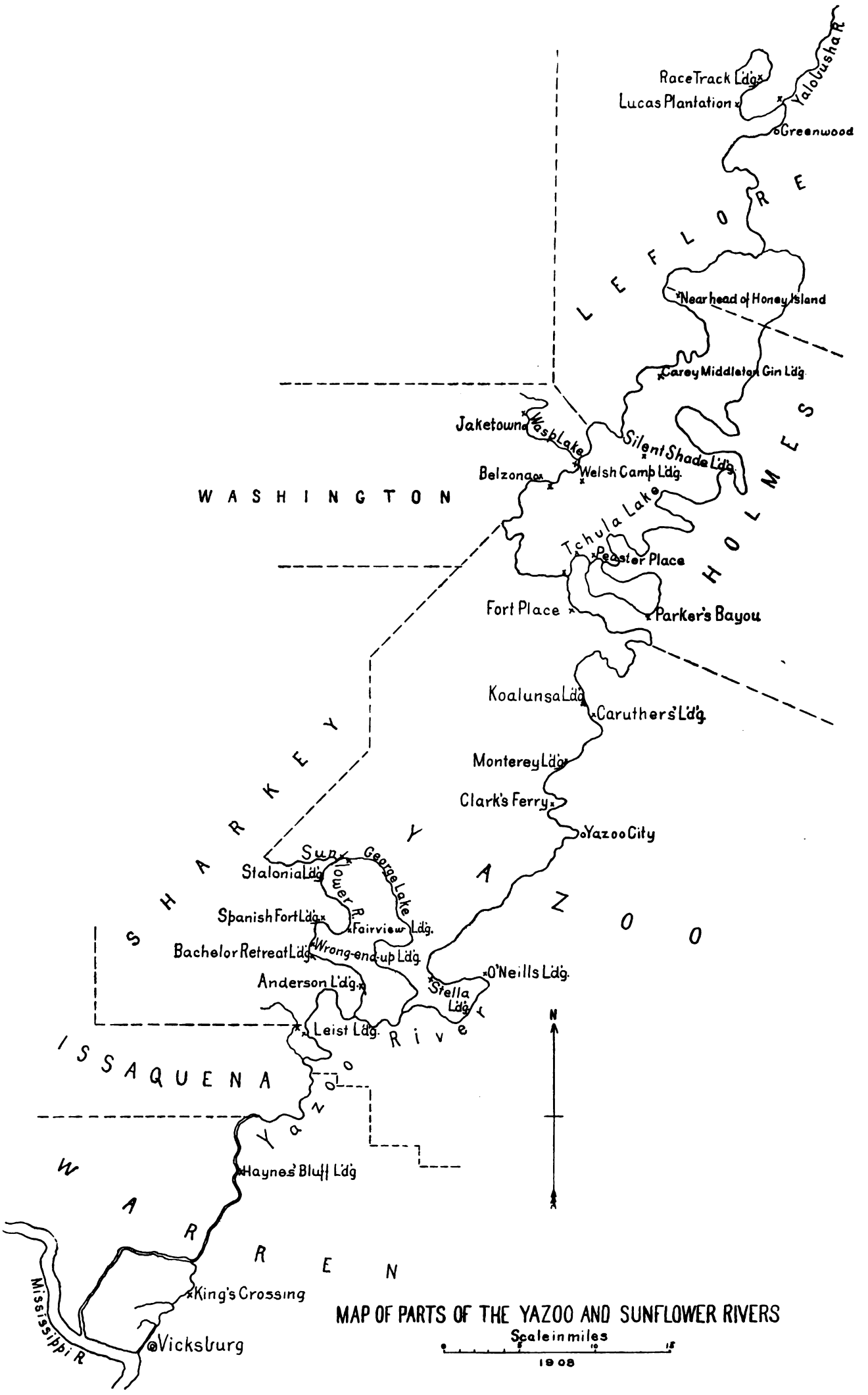

MAP OF PARTS OF THE YAZOO AND SUNFLOWER RIVERS

Scale in miles

1908

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CERTAIN MOUNDS OF ARKANSAS AND OF MISSISSIPPI.

By Clarence B. Moore.

PART II.

Mounds of the Lower Yazoo and Lower Sunflower Rivers, Mississippi.

The Yazoo river has its origin in the northwestern part of the State of Mississippi, and flows in a southerly course through the eastern part of the alluvial plain of the Mississippi valley, to its union with the Mississippi river, near the city of Vicksburg.

The Sunflower river has its source somewhat to the westward of that of the Yazoo, and continues southward to its junction with the latter stream, about 44 miles by water above Vicksburg.

The Yazoo region is of considerable archæological interest, since the Yazoo Indians, who dwelt not far from the mouth of the river that bears their name, were at no great distance north of the famous Natchez Indians who, as the reader is aware, were found by the early explorers living near where now is the city of Natchez, Miss. The Yazoo had been, no doubt, long under the influence of the Natchez Indians, and in 1730 we find the Yazoo, on their return from a visit to the Natchez, massacring the small garrison of the French fort on the Yazoo river.

According to Du Pratz, the Yazoo and other small tribes, after the Natchez troubles with the French, took refuge with the Chickasaw and were absorbed by them.

B. F. French, however, says[1] there were still a few huts of the Yazoo on the Yazoo river so late as 1851.

A list of the small tribes of the lower Yazoo is given by Coxe,[2] and another by Chevalier Tonty,[3] who says: "The Yazous are masters of the soil."

Other lists are given by Du Pratz[4] and by Penicaut.[5] Referring to the Yazoo river at the beginning of the eighteenth century, La Harpe[6] says: "Cabins of the Yazous, Courois, Offagoula and Ouspie are dispersed over the country upon mounds of earth made with their own hands."

[1] Hist. Coll. of La., Part III, p. 59, footnote.
[2] French, Hist. Coll., of La., Part II, p. 227.
[3] *Ibid.*, Part I, p. 82, *et seq.*
[4] Histoire de la Louisiane, Paris, 1758, Vol. II, p. 226.
[5] Hist. Coll. of La. and Fla., 1869, p. 61.
[6] Hist. Coll. of La., Part III, p. 106.

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There can be little doubt that in early times the Natchez-Yazoo region had a comparatively considerable population.

Du Pratz attributes the great falling off in numbers of the Natchez tribe in his time (1720) to the many human sacrifices following the death of the greater and inferior "suns," or nobles, which, he says, were more destructive than the havoc wrought by war.

But the Natchez had their wars also, for, although Charlevoix, speaking of them in 1721, says they rarely go to war and do not glory in the destruction of men, de Montigny, who saw them in 1699, speaks of them as then at war "with almost all the nations on the Mississippi."[1]

De la Vente,[2] who visited the lower Mississippi river in 1704, found most of the peoples there at war. "I could not say for how long back," he says, "their chief glory has been to take a few scalps from their enemies on the slightest pretext." M. de la Vente adds that the English gave the Indians firearms and incited them to make war on each other in order that they (the English) could obtain slaves thereby.

Parenthetically, it may be said that the English were not wholly to blame in the distribution of firearms. Of Indians of Mississippi we are told by Father Membré, who went down the Mississippi in 1682, that "they have also axes and guns, which they procure from the Spaniards, sixty-five or more leagues off."[3]

Presumably all the causes given were contributory to the lessening of the number of aborigines, to which may be added the introduction of smallpox and of alcoholic drink.

We shall now describe our work on the Yazoo and Sunflower rivers. As noted in previous memoirs, it is our practice to have agents, who are accustomed to the work, travel in advance over the region, the investigation of which we have in view, in order exactly to determine the situation of mounds and cemeteries, and to obtain the names and addresses of the owners; thus, in the winter season, in our flat-bottomed steamer, with a large force to dig, including many who have been in our service before, we go directly to work on such mounds, whose owners have accorded us permission.

Preceding our work, Mr. J. S. Raybon, captain of our steamer, who has traveled for a number of seasons to discover mounds for us, accompanied by a companion, carefully searched the Yazoo river from Sharkey to its union with the Mississippi, a distance of about 257 miles by water, and also covered the Sunflower from Faisonia to its junction with the Yazoo—about 96 miles, following the course of the stream.

After about one month's continuous work on the Yazoo and Sunflower rivers

[1] M. l'Abbé Amédée Gosselin, "Les Sauvages du Mississippi," Congrès International des Américanistes, Québec, 1906, Vol. I, p. 43.
[2] *Ibid.*, p. 43, *et seq.*
[3] B. F. French, Hist. Coll. of La. and Fla., New York, 1875, p. 25, footnote.

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(January–February, 1908), it having become evident to us that our search was inadequately rewarded, we determined to change to another field, after having worked on the Yazoo river as far northward as Racetrack Landing, 187 miles by water above Vicksburg; and to George lake on the Sunflower river, 17 miles by river above its union with the Yazoo.

The Yazoo and Sunflower river region forms part of a great alluvial plain that is subject to overflow and is almost without high ground of any sort. Hence our investigation was greatly hampered, since permission to dig was refused in some instances, and restricted in many others, owing to the necessity for landowners to preserve their mounds for the use of cattle and hogs (and for the inhabitants on occasion) in periods of high water. The need to leave the mounds, therefore, in as good condition as that in which they were found and without involving any part of them which might be exposed to wash of water, accounts for many instances of incomplete investigation on our part.

Presumably, however, the result of our research was not materially affected by our limitations, as enough work was done, we think,[1] to prove the preponderance of domiciliary mounds in the Yazoo–Sunflower region and to show that the placing of artifacts with the dead was not widely practised there.

Two points of interest, however, were demonstrated by our work:

According to Du Pratz,[2] no tribe of Louisiana practised cremation—referring, of course, to the great region then known as Louisiana, of which the Yazoo territory formed a part.

As our report on the Yazoo country will show, cremation was practised there in aboriginal times. Hence we must conclude that the custom antedated the time of Du Pratz's sojourn in the region (1718 and later), or, which is more likely, that this author, though a careful observer, was not able accurately to report on all the customs of so extended a territory.

Another point determined by our work relates to urn-burial.

When we wrote our paper on "Urn-burial in the United States,"[3] we were unable to cite an instance of the discovery of an aboriginal urn-burial in Mississippi. Our work on the Yazoo shows it to have been practised there upon one occasion at least.

No skulls or other skeletal remains, in a condition to keep, were found by us in the Yazoo–Sunflower region.

We shall now proceed to describe our work in detail, first tendering the warm thanks of the Academy of Natural Sciences to all owners of mounds or of aboriginal dwelling-sites, who so kindly granted us permission to dig in a region where for reasons we have explained, the favor sometimes involved personal sacrifice.

[1] We will gladly transfer to any institution or to any responsible individual willing to undertake the work, all the data as to mounds, and letters of permission relating to that part of the Yazoo and Sunflower rivers covered by our agents, but not investigated by us.

[2] *Op. cit.*, Vol. III, p. 24.

[3] American Anthropologist, Oct.–Dec., 1904.

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MOUNDS AND SITES INVESTIGATED ON THE YAZOO RIVER.

Mounds at King's Crossing, Warren County (3).
Dwelling-site below Haynes' Bluff Landing, Warren County.
Mounds near Haynes' Bluff Landing, Warren County (3).
Mounds near Leist Landing, Issaquena County (2).
Mounds near O'Neill's Landing, Yazoo County (2).
Mound near Stella Landing, Yazoo County.
Mound near Clark's Ferry, Yazoo County.
Dwelling-site near Monterey Landing, Yazoo County.
Mound at Caruthers' Landing, Yazoo County.
Dwelling-site at Koalunsa Landing, Yazoo County.
Mound near Parker's Bayou, Holmes County.
Mounds at the Fort Place, Yazoo County (5).
Mound near entrance of Tchula Lake, Holmes County.
Mound on Tchula Lake, Holmes County.
Mounds at the Peaster Place, Holmes County (4).
Mound at Belzona, Washington County.
Mound above Belzona, Holmes County.
Mound near Welsh Camp Landing, Holmes County.
Mound near entrance of Wasp Lake, Washington County.
Mounds near Wasp Lake, Washington County (6).
Mounds near Silent Shade Landing, Holmes County (2).
Mounds near Carey Middleton Gin Landing, Holmes County (2).
Mounds near head of Honey Island, Holmes County (2).
Mound near mouth of Yalobusha river, Leflore County.
Mounds on the Lucas Plantation, Leflore County (3).
Mound at Racetrack Landing, Leflore County.

MOUNDS AT KING'S CROSSING, WARREN COUNTY.

At King's Crossing, about four miles in a northerly direction from Vicksburg, in full view from the Yazoo and Mississippi Valley Railroad, are three mounds, and what may be parts of other mounds.

Mound A, on property belonging to Miss M. C. Collier, resident on the place, was used as a fortification by the Confederates during the siege of Vicksburg, and cannon-balls may still be seen partly imbedded in its clay.

Owing to the historical associations of the mound, the owner was unwilling that digging should alter its present shape; and in point of fact, investigation seemed almost unnecessary, inasmuch as the mound evidently belongs to the domiciliary class so abundant throughout southern United States.

At the time of our visit the mound was about 25 feet in height and showed much irregularity in shape, though doubtless formerly it had been a symmetrical oblong. Its basal measurements N. and S. and E. and W. were respectively 157

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feet and 173 feet. The diameters of the summit plateau, in the same directions, were 74 feet and 92 feet.

Mound B, about 100 feet east of Mound A, on property of Mr. T. D. Major, residing nearby, was much spread by long cultivation.

Its height was 5 feet 5 inches; its base, of irregular outline, was 96 feet N. and S., and 84 feet E. and W. Fourteen trial-holes[1] were put into this mound (which probably was domiciliary), without result.

Nine trial-holes were dug without success into soil blackened with organic matter, somewhat to the north of the mound, evidently a former dwelling-site.

Mound C, about 250 feet E. by N. from Mound A, on property belonging to Miss Collier, has been almost cut to pieces—in the first place for use as a fortification, and later, it is said, by treasure seekers.

Dwelling-Site below Haynes' Bluff Landing, Warren County.

About one-half mile in a southerly direction from Haynes' Bluff Landing, on property belonging to Mr. Richard Harris, resident on the place, is a small dwelling-site in a cultivated field.

Investigation yielded nothing of interest with the exception of a neatly-made object of limestone, about the shape and size of a hen's egg, encircled somewhat above the middle by a groove (Fig. 1), which was found on the surface.

On Mr. Harris' property also are two elevations that were believed by persons in the neighborhood to be Indian mounds. Investigation, however, showed them to be ledges of lime-rock partly covered with soil, the stone being similar to that in the low hills about 150 yards distant.

Fig. 1.—Object of limestone. Haynes' Bluff Landing. (Full size.)

Mounds near Haynes' Bluff Landing, Warren County.

On the plantation of Mr. H. K. Williams, resident on the place, about one half mile in a NE. direction from Haynes' Bluff Landing, on ground sloping toward the river, is a symmetrical mound, evidently domiciliary.

This mound, to some extent impaired by wash of water at its NE. angle, has a roadway leading out from its southern side.

Its height from the western side is 30 feet 2 inches; from the eastern side, 28 feet 5 inches.

[1] All trial-holes mentioned in this report were designed to be 6 feet by 4 feet, by 4 feet deep. These dimensions, however, were not always strictly maintained.

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The mound is practically square, the base being about 185 feet in each direction. The summit plateau is 75 feet square.

Fourteen trial-holes were put down, resulting in the discovery of a few fragments of bones of lower animals, mostly of the deer, and a bone which Prof. F. A. Lucas kindly has identified as being part of a tibia of a wild turkey. There were also some bits of earthenware, shell-tempered as a rule, a few having a fine black polish on each side.

In the neighborhood of this mound are three elevations, one of which we believe to be a knoll that has served as a dwelling-site; the other two, remnants of mounds.

In one of these, just below the surface, was a skeleton having small glass beads at the neck.

Mounds near Leist Landing, Issaquena County.

On the property of Mr. Samuel Leist, living on the place, are two mounds; an elevation in a field, probably a dwelling-site; and the remnant of a low mound, on which stands a house.

One of the mounds which, like so many in this region, serves as a refuge for cattle in flood-time, is about 400 yards in a westerly direction from Leist Landing.

Its height, taken from the eastern side, is 29 feet 4 inches.

Its basal outline is circular in a general way, but somewhat irregular owing to cultivation of the field in which it stands and to wash of water in times of overflow of the Yazoo. The sides of the mound also have been impaired through wash of rain and trampling of cattle in all probability, as the highest floods remembered have covered only the lower ten feet of the mound.

The diameter of the mound is about 174 feet. There is but little summit plateau.

Eleven trial-holes were put down in the upper part of the mound, the material encountered being hard loam.[1] These trial-holes were carefully filled by us according to our invariable custom.

With the exception of three recent burials in coffins, nothing was encountered by us in this mound.

On the bank of the Little Sunflower river, which here approaches the Yazoo, and about half a mile N. by W. from the mound just described, is a curious platform covered with loam filled with evidence of long occupancy, averaging 8 feet in height except at the southern end, where the elevation is 14 feet. Its outline is irregularly oblong. Its basal diameter N. and S. is about 305 feet; E. and W. it is 245 feet, approximately.

[1] The composition of the mounds of the Yazoo-Sunflower region is alluvial deposit, rich in clay, with the addition of more or less organic matter in places.

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Fourteen trial-holes through dark loam to yellow clay below, showing the mound had been built and then lived upon, yielded no object of importance.

Mound near Miller Landing, Sharkey County.

A mound near Miller Landing was reported by our agent to be about 12 feet in height and about one acre in extent, but as several houses were upon it, investigation was impossible.

Mound near Sweet Home Landing, Yazoo County.

We did not visit a small mound reported to us as being near Sweet Home Landing, as permission to dig was not obtainable.

Mounds near Big Mound Landing and Sycamore Landing, Yazoo County.

These mounds, included in the list of our agent as near Big Mound Landing and Sycamore Landing, were not investigated by us, the owner explaining they were needed for protective purposes in times of overflow.

Mound near Friedlander Landing, Yazoo County.

A mound near Friedlander Landing was visited by us, but not opened, permission not being obtainable.

Mounds near O'Neill's Landing, Yazoo County.

On property of Mr. R. S. Coody, living on the place, in a cultivated field about one quarter mile from O'Neill's Landing, is a small circular mound 2 feet 6 inches in height and 33 feet in diameter.

Seven trial-holes to the base, were put down with negative result.

In woods one half mile in a northerly direction from O'Neill's Landing, also on property of Mr. Coody, was a circular mound 28 feet in diameter and 3 feet in height.

A small hole had been dug into the central part of the mound previous to our visit.

This mound was totally demolished by us, two bits of pottery being the only discovery made.

Mound near Stella Landing, Yazoo County.

On property of Mrs. H. L. Taylor, of Bentonia, Miss., in a cultivated field about 100 yards southwest from Stella Landing, is a symmetrical, conical mound 7 feet in height and 49 feet in diameter of base.

Two holes, 6 feet by 3 feet each, which were about all the limited summit plateau could accommodate, were put down and later were considerably enlarged by extending them under the slope.

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From 4 feet 4 inches to 4 feet 10 inches down (the outer parts of the layer sloping downward) was a stratum of shells mingled with dry, clayey material, light brown in color. The thickness of this layer was not determined, a hole 1 foot 8 inches in depth not having reached the bottom.

A selection of the shells kindly has been identified by Dr. H. A. Pilsbry, as follows: *Quadrula trapezoïdes*, *Q. pustulosa*, *Q. lachrymosa*, *Q. trigona*, *Q. ellipsis*, *Lampsilis purpuratus*, *L. hydianus*, *L. fallaciosus*, *Viviparus subpurpureus*, *Pyramidula alternata*—all being shells found in the Yazoo region at the present time.

Sloping downward in the mound, the head being 3 feet from the surface, the knees, 4 feet 9 inches, was a skeleton of an adult, at full length, face downward, the head pointing west by north.

The beneficial effect of the infiltration of lime salts on bones was well illustrated in the case of this skeleton, which, down to the knees, was in a condition so friable as to fall almost into dust under slight pressure. From the knees down, however, the bones lay on the shell layer, of which mention has been made, and were hard and excellently preserved.

The tibiæ showed evidence of slight periostitis.

Under the same conditions as those of the burial just described, and interred in exactly the same manner, save that it headed WSW., lay another adult skeleton.

Neither of these skeletons had artifacts of any kind in association, except a fragment of pottery, which was probably an accidental introduction.

About 6 inches above the pelvis of one of the skeletons were the skull and some of the cervical vertebræ of a child. The remainder of this skeleton, probably little more than dust, had, no doubt, been thrown out in the digging without attracting attention. Around the neck were a number of shell beads.

In quest of a cemetery, twenty-four trial-holes from 1 foot to 2.5 feet in depth, as the case required, were put down without result in the neighborhood of the mound, through black soil showing former occupancy, to undisturbed clay.

Mounds near Enola Landing, Oak Valley Landing, Rialto Landing, Yazoo County.

We were unable to obtain permission to explore mounds reported by our agent to be in the neighborhood of Enola Landing, Oak Valley Landing, and Rialto Landing.

Mound near Tarsus Landing, Yazoo County.

A mound near Tarsus Landing, on property of Mr. John S. Hord, of Roseneath, Miss., was not visited by us, permission to dig having reached us after we had passed beyond the place.

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Mounds near Yazoo City, Yazoo County.

A number of mounds near Yazoo City, which were kindly put at our disposal by their owners, Messrs. J. C. Hollingsworth and C. H. Clark, of that city, were not visited by us as we were informed by our agent, who had seen the mounds, that they had been dug into already;[1] and the prospect for gleanings in the Yazoo region was not alluring.

Mound near Clark's Ferry, Yazoo County.

In a cultivated field belonging to Mr. E. T. Clark, living nearby, about one half mile WSW. from Clark's Ferry, in full view from the river, is a symmetrical, conical mound, 12 feet in height and 64 feet across the base. The summit plateau is 17 feet in diameter.

A deep hole, 6 feet by 5 feet, starting in the middle of the summit plateau, had been made at night, previous to our visit, presumably by treasure-seekers.

Two trial-holes, each carried to a depth of about 5 feet, produced only negative results.

In many parts of the field around the mound are deposits of broken shells, pebbles, fragments of implements, etc.—the usual debris of dwelling-sites. Fragments of coarse pottery were abundant; some of these bear cord-marked decoration, a few are colored with red pigment.

About 75 yards due south from the mound is a rise in the ground, thickly covered with broken shells and other debris. Twelve trial-holes put down to undisturbed soil yielded nothing of importance.

Dwelling-Site near Monterey Landing, Yazoo County.

In a corn-field about one half mile NE. from Monterey Landing, on property of Mr. M. R. Payne, of Koalunsa Landing, is much debris on the surface, denoting occupancy in aboriginal times. Fourteen trial-holes were without avail.

Mound at Caruthers' Landing, Yazoo County.

At Caruthers' Landing, on property belonging to Mr. J. S. Caruthers, of Yazoo City, is a mound in full view from the river bank. This mound, which forms part of a barn-yard, is 4 feet in height and 44 feet across its circular base. It has been much trampled by cattle, and is consequently spread and irregular in outline. Fourteen trial-holes resulted in the discovery of two arrowheads.

Dwelling-Site at Koalunsa Landing, Yazoo County.

At Koalunsa Landing is the residence of Mr. M. R. Payne, of whose property at Monterey Landing, mention has been made.

Immediately back of Mr. Payne's residence are shell deposits of considerable

[1] Probably the Champlin mounds described in Twelfth Ann. Rep. Bur. Am. Ethnol., p. 260, *et seq.*

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extent, into which fourteen trial-holes were dug by us, resulting in the finding, in two places, of many human bones, which, lying just below the surface, gave evidence of having been scattered by the plow.

Mounds near Belle Prairie Landing and Beech Grove Landing, Yazoo County.

Our agent reported to us the presence of low mounds near Belle Prairie Landing and Beech Grove Landing, which we did not visit owing to inability to obtain permission to investigate.

Mound near Parker's Bayou, Holmes County.

In a cultivated field, about 1.25 miles in a northerly direction from Parker's Bayou, on property belonging to Mrs. Carrie W. James, of Yazoo City, adjacent to the barn-yard, is a mound 4 feet 7 inches in height and 64 feet across its irregularly circular base. Fourteen trial-holes gave no indication of human bones or of artifacts.

We were informed by tenants on this property that the mound had been erected "by the old master" in comparatively recent times, for the harboring of cattle in high water.

Mounds at the Fort Place, Yazoo County.

On the Fort Place, the property of Mr. W. B. Ricks, of Canton, Miss., is a large mound with a house upon it, in full view from the river banks. As this mound, we were informed, had been altered in shape to accommodate the house, no measurements of it were taken by us, nor was any digging in the mound attempted.

About 40 yards WNW. from the large mound, in a cultivated field, is a mound much spread by the plow, having at present a height of 3.8 feet and basal diameters of 108 feet and 66 feet. Seven trial-holes yielded nothing of interest.

About 65 yards SSW. from the large mound, in the same field, and evidently much reduced in height and somewhat increased in diameter by cultivation, is a mound 3 feet 4 inches high and 62 by 70 feet in diameter. Six trial-holes were without positive result.

A main road in front of the house has cut through two other mounds, leaving only remnants. These mounds, which evidently had been about the same size as the two in the field, are respectively 30 yards NNE. and 40 yards ESE. from the principal mound with the house upon it.

We have in connection with these mounds, a rather interesting feature. Each of the four corners of the principal mound is directed toward one of the surrounding mounds, perhaps indicating attention paid by the aborigines to the cardinal directions. The corner of the great mound, which is directed toward the mound ESE. of it, would be, in the winter time, about in the direction of the rising sun.

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Mound near Entrance of Tchula Lake, Holmes County.

About 300 yards W. by N. from the landing on Honey island, at the mouth of Tchula lake,[1] in a cultivated field on property of Mr. Alfred Key, living nearby, is a mound 3 feet 8 inches high and 80 feet by 60 feet in diameter of base.

Thirteen trial-holes yielded neither bones nor artifacts, but in several cases they exposed deposits of musselshells which were too fragmentary for identification.

In the field in which the mound was situated were many bits of musselshells and other debris, denoting the former presence of aboriginal population.

From the surface came a fragment of an earthenware vessel, seemingly a platter, the inner face of which bears a decoration consisting of a band of bright red paint with alternate bands at right angles, showing red paint and the yellow of the ware. The pigment has been determined by Dr. H. F. Keller to be red oxide of iron.

Mound on Tchula Lake, Holmes County.

On the W. bank of Tchula lake, about three miles from its mouth, on property of Messrs. Wise Brothers, of Yazoo City, is a symmetrical mound 7.5 feet in height and 55 feet across its circular base. Three trial-holes of unusually large size were put down, this number being all the top of the mound would accommodate, the destruction of the sides not being desirable. The clay from which this mound was made was dry and hard, necessitating the use of a pick.

About 1 foot down were a few fragments of human bones; and 3 feet from the surface were bits of earthenware representing an entire pot, or a large part of one, with decoration resembling the impress of finger-nails.

Mounds at the Peaster Place, Holmes County.

On the Peaster Place, about 4 miles up, on the western side of Tchula lake, on property belonging to Mr. R. L. Peaster, of Thornton, Miss., are four aboriginal mounds.

Mound A, a symmetrical mound in sight of the bank of the old river, about 150 yards in an ESE. course from the landing, has a height of 9 feet 4 inches; a diameter at base of 58 feet.

A hole with perpendicular sides, 18 feet 6 inches long and 8 feet wide, was put down from the top of the mound. This excavation was 10 feet 6 inches deep in the middle, 10 feet deep at one end, and 9 feet in depth at the other end, which was under a sloping part of the mound, the excavation including more than the summit plateau.

The outer part of the mound consisted of a layer of loamy material, dark with admixture of organic matter, from 2 feet to 2.5 feet in thickness. Below this was a mixture—mainly clay—which continued until the base of the mound was reached,

[1] In many parts of the South what remains of the former course of a river is called a lake. Tchula lake was part of the Yazoo river in former times.

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and owing to its hard and tenacious character required the aid of a pick to remove. This fact and the restricted space in which the diggers were confined made the work a veritable task.

Forty-seven burials were met with from just below the surface to a thin layer of dark material 9 feet down, on which were three fireplaces, one having fish-scales near it.

This layer, on which were scattered bits of musselshells and fragments of bones of lower animals, was probably the original surface of the ground. On this layer had been deposited a number of burials, but no trace of human remains was found below it, and the ground seemed undisturbed.

The human remains in this mound (with the exception of calcined fragments which, of course, were hardened by fire) were in the last stage of decay and with but two or three exceptions (which, strangely enough, came from near the base), could, even including the teeth, be readily reduced to dust between the thumb and finger.

The form of twenty-six burials was undetermined by us.

Certain burials will be considered in detail.

Burial No. 1, 1 foot 8 inches down, was a skeleton of an adult, lying at full length on the back, the skull SSW. This skeleton, from the skull to the pelvis inclusive, had lain on a bed of fire and the bones were badly affected by the heat, which had burnt the adjacent clay to a red hue.

Burial No. 2, 10 inches down, was an adult skeleton extended at length on the back, the head directed SE. This skeleton, from the upper part of the chest down to and including the feet, had lain on the same fire as skeleton No. 1, the legs of skeleton No. 2 crossing the chest of the other skeleton.

Although such parts of both these skeletons as had been exposed to heat showed markedly the effects of fire, the bones remained entire and were not reduced to small calcined fragments, as is the case when cremation among the aborigines has been successfully carried out.

Burial No. 5 consisted of the skeleton or of a large part of the skeleton of an adult, arranged in a bunch. Immediately above this bunch was a small layer of calcined fragments of bone which had belonged to a somewhat smaller skeleton than the one below it.

The foregoing burials, which were all superficial, it will be noted, were the only ones bearing marks of fire that were met with by us in this mound.

Burial No. 7 consisted of leg bones and a pelvis. We could not determine in this instance if the remainder of the skeleton had disappeared through decay or if no other bones had been interred. No trace of decayed bones was apparent, however.

Burial No. 9 was the skeleton of a child, probably flexed and lying on the left side.

Burial No. 11 was a bunch, though some of the related bones were attached when interred, as, for instance, a few of the lumbar vertebræ and the pelvis.

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Burial No. 17. Nine feet down, that is to say on the base of the mound, lay the skeleton of an adult, the trunk on the back, the face turned to the right, the upper arms along the trunk. The right forearm was flexed up to the outer side of the humerus, with the hand turned in toward, and resting on, the shoulder; the left forearm was flexed up diagonally on the chest.

In addition there were the following burials:

Lying on the right side, closely flexed, one being a child,	9
Lying on the left side, closely flexed,	2
Closely flexed, face down,	1
Recent disturbances,	2

The skulls found in the mound showed no fixed orientation.

There were also throughout the mound scattered fragments of human bones and in several instances traces of decayed bones.

A fragment of a radius showed where the bone had healed with good union after a fracture.

Mainly with burials or where traces of burial remained, were a number of arrowheads or knives, and four lanceheads—all of chert. These points, with one exception, were rather rudely made, many showing breakage, thus leading one to believe that imperfect objects had been utilized for interment with the dead.

One lancepoint of dark gray chert, thin and carefully wrought, heart-shaped in outline, would be a fine example of aboriginal workmanship were it not for the absence of the point.

Lying with the burial was a "celt" 5.4 inches long, having a graceful flare on one side of the edge, though the flare was wanting on the other side. This hatchet was given to Mr. Peaster, owner of the mound.

The earthenware in this mound showed no evidence of shell-tempering, but was poor in quality, and when found was spongy from moisture and reduced to many fragments.

With a burial were parts of a vessel of moderate size, undecorated, which probably had been entire when deposited in the mound.

From near the surface came many fragments which, when put together, formed part of a vessel of yellow ware having as decoration a punctate field with ovals and oblong spaces decorated with red paint and surrounded by depressions so deep and broad that the designs had the appearance of being in relief.

A part of a vessel of inferior, dark ware, in many fragments, bore a rudely incised scroll-decoration.

Apparently dissociated was a small, undecorated pot which fell into many fragments on removal.

Mound B, in a cultivated field, about one mile from Mound A, in a SE. by E. direction, is 2 feet 7 inches high and 40 feet in diameter.

Eleven trial-holes were put down, some of which came upon human remains.

One foot down were bones not showing the effect of fire, though charcoal was immediately above them.

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On the charcoal and extending beyond it was a deposit of calcined fragments of human bones, 2 feet wide, 2 feet 9 inches long, and about 3 inches thick.

Just below the surface of the mound was a thin layer of fragments of calcined human remains mingled with charcoal, 2 feet long by 1 foot 4 inches wide. Nearby was a small decorated pot in fragments. On the opposite side of the layer was another small pot, also in fragments, having a slight, rude decoration and two loop-handles.

Sixteen inches down were the remains of probably what had been a skeleton extended at full length on the back.

FIG. 2.—Vessel of earthenware. Mound D. Peaster Place. (Height 5.2 inches.)

Two feet from the surface was an urn-burial consisting of presumably a skeleton—the decaying remains of a skull and some long-bones being noted—which, after the removal of the flesh, had been taken apart and arranged in a heap on the ground. This heap had been covered, or rather, almost covered (for a few ends of long-bones projected), by a large inverted bowl of most inferior ware, which, upon removal, fell into many small fragments paste-like in consistency. This bowl had no decoration except a grotesque representation of a human head extending above the rim, part of which also crumbled away. Near the projecting bones was a small "celt" which was given by us to the owner of the mound.

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A mingling of decayed skeletons was found 32 inches from the surface.

Mound C, about 95 yards SE. by E. from Mound B, was a circular rise of the ground, 2 feet 4 inches high and 40 feet in diameter. Eleven trial-holes produced only negative result.

Mound D is in a cultivated field, about one-half mile N. by W. from Mound A. Its height is 3 feet; its diameter, 83 feet. Nine trial-holes exposed two skeletons of adults, at full length on the back, parallel one to the other, the heads directed ESE. At the skull of one was an inverted vessel of inferior ware, badly broken, bearing an incised decoration (Fig. 2). On the other side of the head was part of a vessel in fragments.

Mounds at Holly Mound Landing and at Silver City, Yazoo County.

Large rectangular mounds with summit plateaus, evidently domiciliary, were inspected by us at Holly Mound Landing and at Silver City, but permission to investigate was not forthcoming.

Mound near Springwood Landing, Washington County.

A mound near Springwood Landing was reported by our agent but was not visited by us as the owner was unwilling to concede the privilege of digging.

Mound at Belzona, Washington County.

Visible from the river bank, about one quarter mile E. by N. from the landing at Belzona, is a mound, 11 feet in height, on property of Mr. M. Cohn, of that place.

This mound, whose longer sides are parallel to the river bank, which, at this place, is east and west, has a diameter of 165 feet by 125 feet. The summit plateau in the same directions, respectively, is 96 feet and 56 feet. Part of the eastern end of the mound has been hauled away in order to utilize the shell, a large admixture of which, mingled with dark loam, is present in the mound.

Twelve trial-holes put down in the summit plateau resulted in the finding of two fragments of a human femur in one instance and a human *os calcis* in another. Presumably these bones had been gathered with material for the construction of the mound.

One trial-hole exposed six post-holes in line, about 30 inches from the surface. These holes were from 3.5 to 4 inches in diameter and about 2 feet in depth. In another excavation were two similar post-holes.

No doubt an aboriginal building had once stood on a part of the mound before its final increase in height.

Mound above Belzona, Holmes County.

About 1 mile above Belzona, but on the opposite side of the river, immediately at the water's edge, on property of Mr. M. R. Payne, of Koalunsa Landing, Miss., whose kindness in permitting us to dig elsewhere on the river we have had occasion

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to acknowledge, is a mound 5 feet 6 inches in height and 94 feet in diameter. Eleven trial-holes were sunk without result.

Mound near Welsh Camp Landing, Holmes County.

On property belonging to Messrs. L. G. and J. T. Montgomery, of Yazoo City, about three-quarters of a mile in a straight line SSE. from Welsh Camp Landing, though considerably farther by the road, at the edge of a swamp and in full view from the road, was a symmetrical mound, slightly furrowed in places by rain.

On the surface of this mound we picked up a small pottery vessel with a decoration probably made by trailing a broad point on the surface of the clay before firing. The decoration, however, had become rather indistinct through exposure.

Near the foot of the mound lay an arrowhead or knife, of chert, and an object probably of red sandstone, flat on one side, convex on the other, 3.75 inches in diameter and 1.5 inches thick.

The diameter of the base of the mound, which was circular, was 47 feet; the height as taken by us was 9 feet, but we are inclined to believe this figure exceeded the actual height, inasmuch as a perpendicular line from the summit plateau to undisturbed ground at the base proved to be but 7 feet 9 inches in length.

This mound, which was surrounded and practically dug down by us, but subsequently was rebuilt, was composed of soft, brown loam in the outer parts, but as the digging progressed hard and tenacious material was encountered, requiring time and much work to penetrate it.

What seemed to be the base of the mound was a line of black soil containing a few potsherds as well as fragments of bones of lower animals. Below it was undisturbed soil.

The first burial was encountered 16 feet from the center of the mound, and consisted of human teeth and a few fragments of bone in the last stage of decay.

In all, seventeen burials were met with, from 1 foot 9 inches to 8 feet 8 inches in depth, measured to the upper surface of the burials—those at the greatest depth being four skeletons in a circular grave at the center of the mound, 5 feet 8 inches in diameter and extending 1 foot 5 inches below the base.

These four skeletons, with skulls in three different directions, lay three on their left sides and one on the right side. Three were closely flexed, the knees being drawn up well toward the chin. One of the skeletons, flexed on the left side, had the legs at right angles to the body.

The skeletons, somewhat crushed, occupied a space 6 inches in thickness.

But one other grave below the base—a bunched burial or a much-detached skeleton—was found by us.

The predominating form of burial in this mound, where determination was possible, was that of close flexion, there being, in addition to the burials noted, four skeletons closely flexed on the right side, and two closely flexed on the left side. Moreover, two badly decayed skeletons indicated close flexion on the left side. There was also one bunched burial which may have been only a skeleton

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rather more detached than the others, at the time of interment. One of the closely flexed skeletons lay with the mandible reversed.

There were also a burial disturbed in caved soil and one represented by traces of bone and teeth only. Probably others of this kind were passed over by us without notice.

The yield of artifacts from this mound, considering the initial discovery, was disappointing. With each of two burials lay a single arrowhead of chert, and sixteen lanceheads and arrowheads or knives, all of chert, but one which was of quartzite, none carefully made, lay singly throughout the mound, apart from burials.

In addition, also dissociated, a number of broken arrowheads or knives and a few small cutting implements, all of chert, were encountered.

There were in the mound also a number of small balls of compact, brown clay —possibly sun-dried—and several objects of the same material, diamond-shaped in section and evidently intentionally made.

Mound near Entrance of Wasp Lake, Washington County.

At the left side of Wasp lake, going in, about one-half mile in a westerly direction from the entrance to the lake, in a cultivated field belonging to Mr. S. H. McClintock, who lives on the place, is a small mound 3.5 feet high with circular base having a diameter of 48 feet.

Fourteen trial-holes brought no human remains to view, though two undecorated vessels of inferior ware, broken, were found separately in the mound.

These vessels were not shell-tempered, though the ware shows small patches on the surface, which, however, are somewhat darker than fragments of shell, and are not affected by acid.

Mounds near Wasp Lake, Washington County.

About five miles up Wasp lake, on the western side, somewhat less than a mile above Jaketown, are six mounds in the immediate neighborhood of the landing and a number of smaller mounds some distance away.

Although it was impossible for us to obtain permission to excavate these mounds, we spent some time in examining their surfaces.

Two are large, quadrangular mounds with summit plateaus and evidently domiciliary; one, a low flat mound; another through which a road has been cut; while two are mounds from 3 to 5 feet in height, which have been considerably reduced in diameter to make way for a railroad.

One of these mounds apparently had contained many burials, as fragments of human bones were scattered about and a large part of a skeleton lay exposed.

Spread over the neighboring field were many fragments of shell and numerous bits of earthenware, some of the latter shell-tempered and some not. Nearly all were undecorated, though some bore a beautiful, bright red pigment on both sides. The coloring matter on one of these, tested by Dr. H. F. Keller, proved to be red oxide of iron.

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At the base of the cuttings of the two mounds through which the railroad passes, were quantities of fragments of pottery, some shell-tempered and some of the same sort of inferior, porous ware we had found farther down the river.

Mounds near Silent Shade Landing, Holmes County.

Somewhat less than two miles in, along the Tchula road from Silent Shade Landing, in full view from the highway, are two mounds within a few feet of each other.

Mound A, the northernmore, on property belonging to Mr. Robert E. Warfield, of Tchula, Miss., is 5 feet 7 inches high and 50 feet in diameter.

An excavation was made by us, 16 feet by 10 feet, with perpendicular walls, extending through a dark line with light-colored clay below. This clay, which we considered to be the base, was somewhat deeper than the height of the mound measured from the outside.

As usual, the outer part of the mound proved to be soft, the inner part hard and tenacious.

Considering this mound to have been built for burial purposes (and we do not see how the reverse can be possible), one cannot fail to be impressed by the small number of interments in so large a central portion—only seven having been encountered.

Four burials came from near the surface: two bunched burials; one probably a bunch; one too badly decayed to determine.

Nineteen inches down was a deposit of calcined fragments of human bones, 22 inches by 15 inches by 5 inches thick. On top of part of this deposit was a small, undecorated bowl of inferior ware, in fragments.

Two skeletons at full length on the back, almost in a condition to crumble into dust, lay, side by side, 3 feet 8 inches down, the heads directed SW.

Near the skull of one were two small, undecorated vessels of ordinary shape, and of inferior, porous ware, both in fragments. With these vessels were two hammer-stones.

The second skeleton also had near the skull a vessel similar to the others.

On the chest, in contact with the chin, was an ornament of wood, rotten through and through, which had been coated with sheet-copper, a few fragments of which still adhered. This ornament, circular, flat on one side and convex on the other, had a diameter of 2.5 inches, a thickness of .75 of an inch.

Near the surface of the mound were two undecorated pots of crude ware, found in fragments, separately, apart from human remains.

No earthenware from this mound showed tempering with shell.

Mound B, on property of Mr. S. S. Hudson, of Vicksburg, Miss., has a basal diameter of 46 feet. Its height is 4 feet 10 inches.

An excavation with perpendicular walls, 10.5 feet by 10 feet, and 5 feet 7 inches in depth, was sunk in the central part of the mound. No basal line was

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encountered, though a hole of additional depth was made, extending into seemingly undisturbed soil. Ten inches below the surface was a layer of bones so badly decayed that the method of burial was past determination.

With this layer, together, were a small, undecorated bowl in fragments and a badly crushed vessel also without decoration.

At another part of this layer of bones were two other vessels, both badly broken. None of these vessels was tempered with shell.

Three feet 4 inches from the surface was a badly decayed burial which evidently had been at full length on the back.

Mounds near Carey Middleton Gin Landing, Holmes County.

About one-half mile ESE. from the landing at the Carey Middleton gin, though somewhat farther by the road it is necessary to take in the rainy season, on property of Mr. Carey Middleton, who lives on the place, are two mounds in a cultivated field, about three hundred yards apart.

Mound A, 6 feet 3 inches in height, much spread by cultivation, has a diameter of 64 feet.

A hole 9 feet by 12 feet was carried squarely down through a dark line of soil into undisturbed ground below.

One foot down was a bunched burial of badly decayed bones.

Slightly lower was a skull indicated mainly by remnants of teeth.

Mound B, NE. by N. from Mound A, is 5 feet 10 inches high and has a present diameter of 60 feet, much of which has been caused by the cultivation of the mound.

An excavation 9 feet by 11 feet, carried perpendicularly down, was made to a depth of somewhat more than 6 feet.

Eighteen inches down was a layer of fragments of calcined human bones, 30 inches by 24 inches and 2 inches thick. Mixed with these fragments was burnt clay but no ashes or charcoal, which indicated that the cremation had been conducted elsewhere.

Three feet down were human bones too badly decayed to show the method of burial.

The closely flexed skeleton of an adult, lying on the right side, was 3 feet 8 inches below the surface.

Not far from the Carey Middleton mounds is another which our agent informs us is somewhat larger than the ones investigated by us. This mound, belonging to another person, was not placed at our disposal.

Mound near Montgomery Landing, Holmes County.

Our agent reported to us a mound near Montgomery Landing, which we did not visit, not having been able to obtain permission to dig.

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Mounds near the Head of Honey Island, Holmes County.

Near the head of the Yazoo river side of Honey island is the plantation of Mr. A. W. Evans, who resides on the place. The lower part of this plantation is known as Gold-dust. About half a mile in a NE. by E. direction from the landing at Gold-dust are two mounds in a cultivated field, in full view of each other, both much spread by cultivation.

One, largely of sand, has a height of 4 feet 4 inches and diameters of 78 feet and 64 feet.

The other mound, partly of sand, 2 feet 10 inches high, with diameters of 38 feet and 54 feet, has, somewhat below the surface, a great deposit of musselshells, mostly badly crushed. Some less broken than the rest have kindly been determined by Dr. H. A. Pilsbry as *Quadrula pyramidata*, *Q. plicata*, *Lampsilis fallaciosus*, all shell-fish still found in the Mississippi valley.

Mound near Sheppardtown Landing, Leflore County.

Two mounds near Sheppardtown Landing, described by our agent as visited by him, were passed by us without a visit, permission to dig not having been obtained.

Mounds near Shell Bluff Landing, Leflore County.

There are a number of mounds near Shell Bluff Landing, on properties belonging to Messrs. W. G. Poindexter, of Sheppardtown, Miss., and F. M. Southworth, residing on his property at Phillipston. Although both these gentlemen gave cordial permission to investigate, we did not avail ourselves of their kindness as the mounds which were inspected by us so nearly resembled others in which we had been unsuccessful that we decided not to delay our journey.

Mounds near Phillipston Landing, Leflore County.

Two small mounds near Phillipston Landing, on property belonging to Mr. F. M. Southworth, to whose plantation at Shell Bluff Landing we have already referred, were not investigated by us for the same reason that those at Shell Bluff Landing were not dug into, though Mr. Southworth had kindly placed the Phillipston mounds at our disposal.

Mounds near Oakwood, or Roebuck, Landing, Leflore County.

Two mounds near Oakwood, or Roebuck, Landing, belonging to Mr. Herman Aron, of New Orleans, La., were not visited by us owing to the unsatisfactory return from mounds in this region, though Mr. Aron had willingly given his consent to our work.

Mound near Mouth of Yalobusha River, Leflore County.

On property of Mr. S. J. Stein, of Greenwood, Miss., at the roadside, about one quarter mile NNE. from the landing, at the union of the Yalobusha, an

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unnavigable stream, and the Yazoo river, is a mound almost circular in basal outline, with a diameter of 46 feet. The height of the mound is 3.5 feet. A central excavation 10.5 feet by 8.5 feet by 4 feet deep yielded neither bone nor artifact.

Mound near Ashwood Landing, Leflore County.

In a cultivated field, a short distance from Ashwood Landing, on property belonging to Mr. W. C. George, of Greenwood, Miss., is part of a mound, the remainder having disappeared through cultivation and through wash of rain. Although Mr. George had consented to investigation of the mound, we decided the work would be inexpedient.

Mounds near Star West Landing, Leflore County.

Two small mounds, said by our agent to be about 1.5 miles from Star West Landing, were not dug into, although their owner, Mr. F. M. Aldridge, of Greenwood, Miss., had courteously authorized the investigation.

Mounds on the Lucas Plantation, Leflore County.

On the plantation of Dr. J. H. Lucas, of Greenwood, Miss., about 5 miles above Greenwood, on the west side of the river, all in sight from the bank, are three mounds.

The northernmost is a remnant immediately on the bank.

The next, in a cultivated field, has a small modern cemetery upon it.

The third, in the same field, much spread by plowing, is 6 feet 4 inches in height, and 82 feet across its circular base. Fourteen trial-holes were sunk without result.

Mound at Racetrack Landing, Leflore County.

In sight from Racetrack Landing, on property of Mr. S. F. Jones, resident on the place, is a mound with irregularly circular base, 107 feet in diameter, and 20 feet across the circular summit plateau.

The mound, though furrowed by rain and somewhat cut by cultivation at the base, is still symmetrical, and being 24 feet in height, presents an imposing appearance.

Three trial-holes in the summit plateau, each 5 feet in depth, were without result.

On our way up the river our hopes had been buoyed by reports which our agent had heard of a carved vessel of stone, with a top of like material, which, it was said, had been taken from the mound at this place.

Our agent had visited the mound in the absence of the owner, and hence had been unable to investigate the report.

The rumor turned out to be without any basis whatsoever, nothing, we were assured by Mr. Jones, having been taken from the mound.

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At this point on the Yazoo river, there being no report from mounds farther up to justify hope of greater success in returns, the investigation of the river banks and the adjacent territory was abandoned by us, although, as we have said, abundant work had been mapped out by our agent as far as Sharkey, about 70 miles above by water.

MOUNDS AND SITES INVESTIGATED ON THE SUNFLOWER RIVER.

Mound near Anderson Landing, Sharkey County.
Mound near Bachelor Retreat Landing, Sharkey County.
Mounds near Wrong-end-up Landing, Yazoo County (3).
Mounds at Spanish Fort Landing, Sharkey County (3).
Mound at Fairview Landing, Yazoo County.
Mound on Fairview Plantation, Yazoo County.
Mounds at Stalonia Landing, Sharkey County (3).
Mounds near George Lake, Yazoo County (a large group).

Mound near Anderson Landing, Sharkey County.

In woods about one-quarter mile E. by S. from Anderson Landing, on property probably belonging to Messrs. George T. Houston & Co., of Chicago, Ill., to whom the Academy is especially indebted for the fullest and most cordial permission to excavate all mounds on the great territory owned by them, on the Sunflower river, and for kind offers to facilitate its work in every possible way, is a mound 6 feet 7 inches in height and 62 feet across its circular base.

This mound, which gave evidence of former, but apparently somewhat superficial, investigation, was dug out by us in the central part, the excavation being 7 feet 6 inches, by 12 feet, by 7 feet 4 inches deep, the sides of the hole being carried squarely down.

Near the surface were disturbed human bones with which were fragments of a vessel of yellow ware without shell-tempering. This vessel (No. 1), whose parts have been put together, has a quadrilateral body with rounded corners, on which is a decoration partly punctate and partly produced by the trailing of a broad-pointed implement. Below the upper margin of the vessel is a circular band of evenly made, reticulated lines, and an encircling line of imprints, made with the end of a blunt tool (Fig. 3).

About 3 feet 9 inches from the surface was a small, undecorated bowl of dark ware (Vessel No. 2), in fragments, with mere traces of a skull and teeth nearby.

Six feet 9 inches down, presumably on the base of the mound, near what were probably traces of human bones, was Vessel No. 3, in fragments (Fig. 4). The yellow ware is without shell-tempering. Below the rim is a rude, cross-hatch decoration, while the body of the vessel has a primitive, trailed design, three times represented, showing a serpent (Fig. 5).

While we were engaged on other and more superficial work in the mound, an undecorated vessel in small fragments was encountered.

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FIG. 3.—Vessel No. 1. Anderson Landing. (Height 3.25 inches.)

FIG. 4.—Vessel No. 3. Anderson Landing. (Height 3.9 inches.)

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Mound at Pecan Grove, Sharkey County.

This mound, which was kindly placed at our disposal by Mr. T. H. Campbell, Jr., of Yazoo City, was not dug into by us owing to the presence of a building on it.

Mound near Bachelor Retreat Landing, Sharkey County.

By the roadside, in sight from Bachelor Retreat Landing, on property of Mr. John Ross, who lives at the landing, is a mound much worn by cattle and washed by rain and by the river in times of overflow. The present diameter of the circular base of the mound is 60 feet; its height is 3 feet 7 inches.

Fourteen trial-holes resulted in the discovery of decaying human bones just below the surface, and of what appeared to indicate a bunched burial, 2 feet 8 inches down.

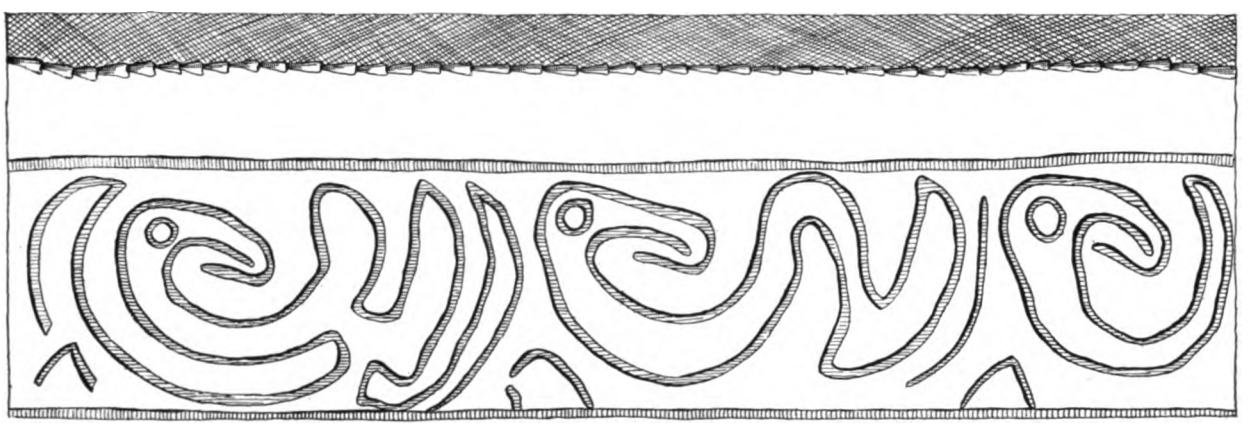

Fig. 5.—Vessel No. 3. Decoration. (Half size.)

Mounds near Wrong-End-Up Landing, Yazoo County.

In woods about three-quarters of a mile in an easterly direction from Wrong-end-up Landing, on property of Mrs. J. E. Edwards, whose address we were unable to learn, is a mound with circular base and summit plateau, whose diameters are, respectively, 72 feet and 28 feet. Its height is 7 feet 9 inches.

Nine holes were dug into the summit plateau and into the sides of the mound, four being ordinary trial-holes, and five considerably larger.

Nearly 4 feet down were remains of a badly decayed skeleton.

In another hole, 3 feet from the surface, were a number of bones crushed together, greatly decayed, including three skulls indicated by remains of teeth.

Two other mounds about one-quarter mile in a northwesterly direction from the one just described, served as foundations for pens for domestic animals in flood-time and were not dug into by us.

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Mounds at Spanish Fort Landing, Sharkey County.

Visible from Spanish Fort Landing are three mounds, upon one of which is a house; upon another, a cotton-gin.

A few yards from the gin, in a cultivated field, on property of Mrs. L. A. Kettleman, living nearby, is a circular rise of the ground, evidently a dwelling-site as its surface is thickly strewn with bits of pottery and fragments of musselshells. Considerable digging in this place was without return.

The field in which this dwelling-site is, having an area of forty-five acres, it is said, is enclosed, except that part which faces the river, by a semi-circular embankment resembling a levee. It is from this embankment, which we believe to be aboriginal, like similar enclosures in this region, that the landing takes its name.

Mounds at Fairview Landing, Yazoo County.

In sight from Fairview Landing, on property of Mr. William G. Childers, of Satartia, Miss., in a cultivated field, are three mounds in line, but short distances apart.

The largest, much spread, had been considerably dug into previous to our visit, and the smallest mound is in use as a cemetery. Neither of these mounds was dug into by us.

The third mound, lying between the other two, is conical and fairly symmetrical. Its height is 11 feet 6 inches; its basal diameter, 75 feet. A moderate amount of digging in this mound showed that it, too, had been used as a cemetery in recent times.

Near Fairview Landing is a mound belonging to Mr. S. S. Hearn, of Wrong-end-up Landing, which we did not investigate owing to the presence of a house upon it.

Mound on Fairview Plantation, Yazoo County.

In sight from an arm of the river that here encircles a small island, at the upper end of Fairview plantation, partly cut away by the road, is a small mound also belonging to Mr. S. S. Hearn. The height of this mound is 3 feet; its diameter, 35 feet. Our investigation was unrewarded.

Mounds near Maybon Landing, Yazoo County.

Two mounds reported by our agent as near Maybon Landing were not visited by us, permission to dig not being forthcoming.

Mounds at Stalonia Landing, Sharkey County.

On property of Mrs. N. J. Guess, living nearby, at Stalonia Landing, are three mounds, one of which, much cut away by a railroad, shows no bones or artifacts along the section.

The other two mounds are in a cultivated field just beyond the landing.

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One of these, almost plowed away, was dug into by us without success.

The third mound, well preserved, evidently domiciliary, has a height of 9 feet. Its basal length NNE. and SSW. is 128 feet; and 103 feet SE. by E. and NW. by W. The diameters of the summit plateau in the same directions, respectively, are 64 feet and 43 feet.

Considerable digging in this mound yielded only a small, flat mass of limestone, pitted on one side.

Mounds at the Mouth of George Lake, Yazoo County.

Two small mounds at the mouth of George lake, southern side, were visited by us but were not investigated, though permission had been given by Mrs. C. E. Crippen, their owner, who lives nearby.

Mounds near George Lake, Yazoo County.

About one-half mile above the union of George lake[1] with the Sunflower river, on the southern side of the lake, on the plantation of Mr. W. A. Henry, of Yazoo City, Miss., to whom the Academy is especially indebted for full permission to investigate, is a notable group of mounds.[2]

These mounds, rising here and there around a great central tumulus, stud an area of about forty-four acres, as determined by a recent survey, we are informed.

Here and there pools of water mark excavations whence material for the mounds was taken.

The mounds are enclosed, except on the lake-front, by an aboriginal embankment, probably from 4 to 6 feet in height, and no doubt of greater altitude in early times. Possibly it was then surmounted by a stockade.

The number of mounds that surround the great central one in a rather irregular way would be hard to determine with exactness, inasmuch as but two of the entire group have not been subjected to cultivation over the entire surface, and some, probably never of great size, are now hardly distinguishable. Presumably more than thirty rises of the ground and mounds small and great could be counted within the enclosure.

Of all these mounds, however, but three retain any resemblance to their former shape, supposing them to have been other than mere conical elevations; and one of these three (now with a well-marked summit plateau), cultivated over its entire surface, its soft material exposed to wash of heavy rains, will soon be in the condition of most of its companions.

The most symmetrical mounds and the only ones (except the one we have noted as in process of destruction) that are not of moderate height, are the great central mound and another about 80 yards in a southwesterly direction from it.

The great central mound (whose sides almost exactly face the cardinal points),

[1] The reader will recall that a "lake" in this region, is where the river formerly flowed but has been diverted from its course.

[2] This land, being somewhat elevated, is usually beyond reach of the river, though it is covered in times of very high water, as was the case in the great overflow of 1882, when the inhabitants and their stock, from a considerable distance around found these mounds a welcome place of refuge.

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with remnants of causeways on the E. and N., is now almost devoid of vegetation; and trampled by animals and with the soil of the summit plateau loosened by cultivation and offering full scope to wash of rains, which have eaten narrow channels[1] into the sides of the mound, has lost much of the symmetry it possessed until recently, and soon, we fear, will be still farther impaired.

The height of this mound is 55 feet, as taken by us from near the base. We were informed, however, that a surveyor, standing at some distance from the mound, had determined its height to be more than 60 feet.

It seemed to us, however, that the standpoint of the surveyor, as pointed out to us, was somewhat below the general level, a pool of water being there at the time of our visit. Perhaps a fair judgment of the height of the mound would be midway between the figures given by the surveyor and our own, as possibly we stood somewhat on the slope when our determination was made.

The western part of the summit plateau, 57 feet in length, is about 9 feet lower than the eastern 42 feet—the total diameter of the plateau E. and W. being 99 feet. In a N. and S. direction the diameter is 93 feet.

The basal diameters of the mound are 263 feet E. and W., and 275 feet N. and S. Doubtless the mound, at one time, was practically square in horizontal section.

The mound to which we have referred as southwesterly from the great mound is a truncated cone 22 feet in height, about 173 feet in diameter of base and 86 feet across its summit plateau. The remains of a causeway are apparent on the northern side.

Strewn over the enclosed area, among the mounds and on them, in some places in great abundance, are chert pebbles; fragments of chert; bits of musselshell; and small parts of earthenware vessels.

The ware, as a rule undecorated, is shell-tempered in most instances but sometimes has a tempering of small fragments of stone which does not react to acid, such as is often found in the ware of the Yazoo–Sunflower region.

The decoration, when present, so far as noted by us, offers no original feature. Mr. J. B. Martin, manager of the plantation, to whom we are indebted for much information as to the place, showed us a small water-bottle of excellent, yellow, shell-tempered ware, with a graceful decoration consisting of a current scroll and small circle, four times repeated, boldly executed with a broad, trailing-point. This vessel, Mr. Martin said, had been found in digging a post-hole on the property.

There were found on the surface by members of our party, several small, delicately-shaped arrowheads of chert; part of a diminutive chisel apparently of silicified wood; a ball of chert, from 2.75 inches to 3.5 inches in diameter. This ball, which has depressions on two opposite sides as for fingers, perhaps served as a hammer-stone. We read, however, in the Narrative of d'Iberville[2] of "a round stone ball which they strike with sticks" for amusement.

[1] One at least reaching a depth of 5 feet.
[2] French, Hist. Coll. La. and Fla., 1875, p. 74.

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We found on the surface of a low mound, a pipe of earthenware, probably representing a wolf or a dog (Fig. 6). The ware is shell-tempered; the modeling, without artistic merit.

Thirteen trial-holes sunk into the mound on which this pipe lay were without reward.

We did but a moderate amount of digging on and among the mounds near George lake, finding two burials lying near the surface, which had undergone disturbance.

There was little inducement to dig, as superficial burials, had there ever been

FIG. 6.—Pipe of earthenware. Mound near George Lake. (Full size.)

any, in summit plateaus of the mounds must have been long since plowed and washed away, and the same conditions, no doubt, largely existed in the level ground.

Such other mounds as were investigated yielded nothing.

Another discouraging feature was the almost entire absence of history of the discovery of bones or of artifacts on the plantation, despite deep and constant cultivation and wash of rain, through which the level ground in places, as well as the mounds, is deeply furrowed.

At George lake our journey up the Sunflower river was abandoned, although, as we have said, the stream had been reconnoitered by our agents as far as Faisonia, 79 miles above, by water.

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PART III

THE BLUM MOUNDS, MISSISSIPPI

BY

CLARENCE B. MOORE.

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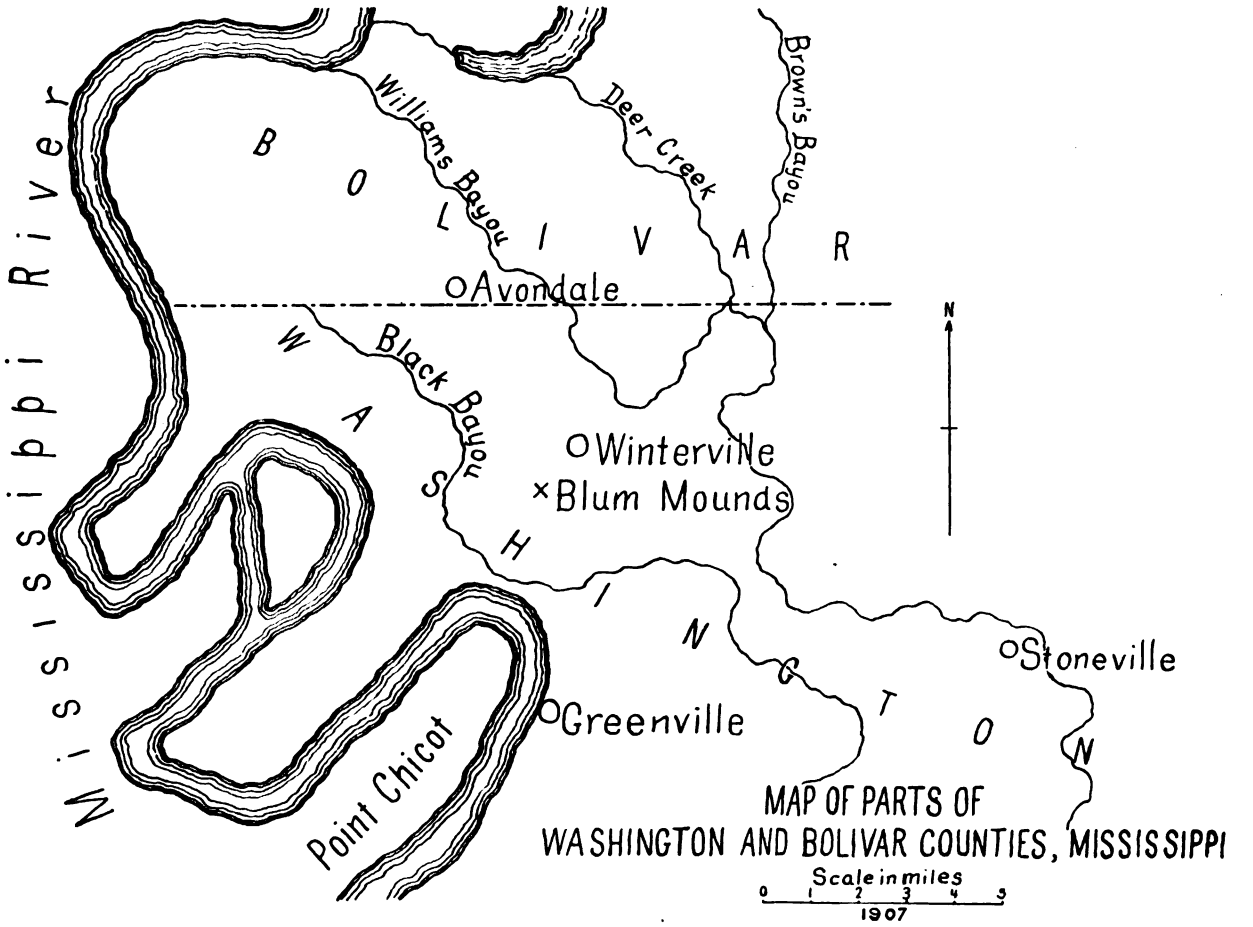
CERTAIN MOUNDS OF ARKANSAS AND OF MISSISSIPPI.

By Clarence B. Moore.

PART III.

The Blum Mounds, Mississippi.

The Blum group of mounds, in Washington county, Miss. (see map), is about four miles in a straight line, in a northerly direction from the city of Greenville;



about one mile in a southerly direction from Winterville station; and two miles NNE. from the Mississippi river at its nearest approach.

The group on a plantation belonging to A. Blum, Esq., of Greenville, Miss., and of New Orleans, La., to whom the warm thanks[1] of the Academy of Natural

[1] The Academy wishes also to express its indebtedness to Messrs. J. B. Williams, Esq., of Greenville, the lessee of the property, and J. H. McKnight, Esq., of Winterville, the superintendent.

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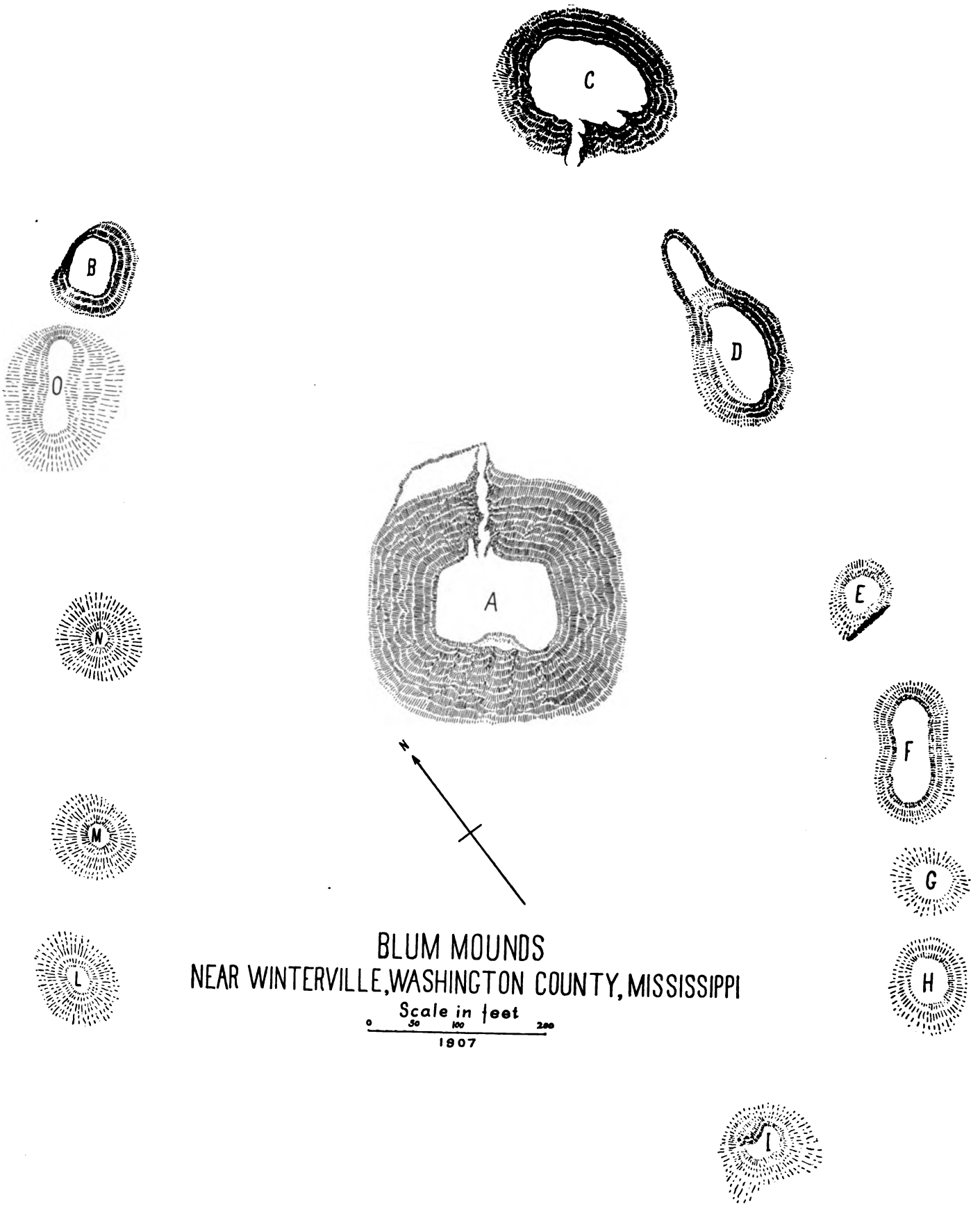

BLUM MOUNDS
NEAR WINTERVILLE, WASHINGTON COUNTY, MISSISSIPPI

Scale in feet
0 50 100 200

1907

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Sciences are tendered for full and cordial permission to investigate, consists of a great central mound, 55 feet high, surrounded by fourteen other mounds forming an irregular ellipse. One of these mounds is so nearly obliterated, however, that it might well be passed over in an enumeration.

The diameters of this ellipse are about 1600 feet NE. and SW., and 1000 feet NW. and SE.

The central mound, marked A, and the other mounds marked B to O, inclusive, are shown in the accompanying plat of a survey[1] made by Dr. M. G. Miller, at the time of our visit.

Certain small elevations outside and inside the ellipse, probably dwelling-sites, have been disregarded in the plan.

The Blum mounds, uninvestigated previous to our visit, though a few holes had been dug into them (by treasure-seekers, it is said), are not mentioned in the "Mound Reports" of the "Twelfth Annual Report of the Bureau of American Ethnology."

They are not the "Avondale Mounds" referred to in the "Twelfth Annual Report" and in Thomas' "Catalogue of Prehistoric Works," but are unquestionably the group described in the latter work as being "nearly opposite Point Chicot," which group is more fully described in the Smithsonian Report for 1879, page 383 *et seq.*, though the plan accompanying the description gives but little idea of the mounds as they appear at present.

These mounds on the river plain and, consequently, on land subject to overflow, are not, however, exposed to wash of water in time of flood, it is said, the distance from the river being such that the current has no influence, and the water consequently is still.

The summits of the more important mounds of the group, so far as known, have never been submerged, the usual rise of water about the mounds when there is a flood being, we are told, from 3 to 5 feet.

Nevertheless, a number of the mounds (E, F, G, H, I, K, L, M, N, O) have no regularity of outline, a fact due, we believe, to long-continued cultivation, though some of the mounds enumerated have not been plowed over in comparatively recent times.

Even the regularity of most of the larger mounds, the sides of which are too steep for cultivation, is considerably impaired, owing, probably, to wash of rain; to the constant tread of mules, sheep, goats, and hogs, which frequent the mounds in numbers; to the deep and extensive rooting of hogs; and to the general wear and tear of time, which is ever more destructive in the case of mounds like the Blum mounds which are but little protected by the roots of trees and shrubbery.

It might be suggested that in earlier times, before the erection of the levee, different conditions tending to make stronger the erosive force of the water, may

[1] Though the expedition was amply provided with photographic apparatus, no photographs of the mounds were made. Experience has shown that the work of the camera in connection with mounds is misleading, undue prominence to the foreground being given and inadequate portrayal of the heights.

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have existed, or that the mounds may have been much nearer the river (which, as all know, is ever changing its course) and were exposed in flood time to a deeper and fiercer current than is the case at present.

The answer to this would be that Mound J (which is protected by bushes and shrubbery, and does not seem to be frequented by stock) is almost intact, and that this mound has suffered only to the extent of a partial leveling of its causeway, evidently through cultivation.

A current that would wash away any of the mounds, presumably would eat into all of them.

The height of a mound often depends on the side from which the measurement is made. The subjoined list gives the altitudes of the Blum mounds, as taken from within the enclosure.

Mound A—55 feet.
Mound B—13 feet 2 inches.
Mound C—19 feet 6 inches.
Mound D—17 feet 6 inches.
Mound E— 6 feet 7 inches.
Mound F— 9 feet 7 inches.
Mound G— 4 feet.
Mound H— 7 feet 7 inches.
Mound I— 9 feet.
Mound J—30 feet 10 inches.
Mound K—12 feet 5 inches.
Mound L— 7 feet 6 inches.
Mound M— 7 feet 3 inches.
Mound N— 8 feet.
Mound O—10 feet 10 inches.

The Blum mounds and surrounding territory have comparatively no history as to the discovery of artifacts or of human remains. No human bones were seen by us on the surface, though extensive ditching had been done, and much of the level ground and a number of the mounds are regularly plowed over; and only a limited number of fragments of earthenware lay around—all this lack of signs of former occupancy being in marked contrast with our experience at the great group of mounds at Moundville, Ala.

Six days in November and December, 1907, were devoted by us to the Blum mounds, with five of our trained men to dig, it being impossible to engage additional help at the mounds owing to scarcity of men on account of the needs of the cotton-crop. However, as it turned out, a greater force was not urgently called for.

A very long experience in mound-work in southern United States has led us to believe that domiciliary mounds and mounds built as places of worship (which classes of mounds are of considerable size and usually are rectangular in outline with summit plateaus) seldom contain burials. We know, however, there are noteworthy exceptions to this rule, some of which we have enumerated at length

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in the account of our first visit to Moundville,[1] and that summit plateaus or parts of them sometimes were used for burial purposes.

We commenced, then, to investigate the Blum group of mounds in the same manner as we did the mounds and cemeteries of Moundville, namely, by sinking trial-holes in the summit plateaus of the mounds, and in the level ground where appearances indicated the possible presence of a cemetery, with the intention, should burials be discovered, of prosecuting the search in a more thorough way.

The trial-holes in the Blum mounds were intended to be 6 feet long by 3 feet wide and 4 feet deep, but as the material of which the mounds were made was, as a rule, a tenacious, alluvial deposit, dried comparatively hard and in places still farther hardened by fire, necessitating the use of picks and grubbing-hoes, the dimensions given were not always adhered to exactly. Sometimes, but not often, the holes exceeded the standard size.

In the level ground the trial-holes were 6 feet by 3 feet and were usually 4 feet deep, but sometimes when ground unmistakably undisturbed was reached, the holes were not carried to a full depth of 4 feet.

We shall now state the extent of the tentative work carried on by us in connection with the Blum mounds, giving the area of each summit plateau where such was present.

Mound A, summit plateau 100 feet by 132 feet, approximately, was accorded twelve trial-holes on the summit plateau and five at its northern corner.

Mound B, with a summit plateau 44 feet by 60 feet, had on it a number of burials made in recent times, which were not disturbed by us. But five trial-holes were put down in this mound.

Mound C, with a summit plateau of irregular outline, 90 feet by 136 feet, received five trial-holes.

Mound D, with an irregular, oblong plateau about 60 feet by 112 feet, was fairly well covered by the seven trial-holes allotted to it. In one hole, just below the surface, was an isolated skull badly decayed. In another were fragments of a skull.

Mound E, part of which had been cut away in the making of a road, received one trial-hole in addition to a close examination of the section laid bare.

Mound F, four trial-holes. A small oblate-spheroidal vessel of coarse ware was found near the surface.

Mound G, five trial-holes. Lying near together in this mound were nine double-pointed fish-scales which Mr. H. W. Fowler, of the Academy of Natural Sciences, has identified as probably belonging to the alligator-gar (*Lepisosteus tristœchus*), a fish abundant in the lower Mississippi river.

The scales of this fish, which Du Pratz[2] calls *poisson-armé*, are said by him

[1] "Certain Aboriginal Mounds of the Black Warrior River," Journ. Acad. Nat. Sci., Vol. XIII p. 241 *et seq.*

[2] Histoire de la Louisiane, Vol. II, p. 168, Paris, 1758.

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sometimes to have served as points for the arrows of aborigines of the lower Mississippi region. Certain it is that the ganoid scales of the alligator-gar, a fish which sometimes reaches a length of from 8 to 10 feet, would be admirably suited for use as projectile points.

Mound H, five trial-holes.

Mound I, which had been much dug into previously, received four trial-holes.

Mound J, summit plateau 76 feet by 80 feet. Nine trial-holes were sunk into the summit plateau of this mound, resulting in the discovery of a badly decayed skeleton of an adult, at full length on the back, 2.5 feet below the surface.

Ten trial-holes were put into Mound K. A number of fish-scales were found, probably belonging to a young alligator-gar. These scales were too small to have served as arrowpoints, and, moreover, they lay one overlapping the other as if a portion of the fish had been present originally.

Just below the surface of Mound K were three small, coarse, undecorated pots of earthenware, all with flat bottoms. Near these, together, were two small pots, one with two loop-handles, the other with loop-handles on two opposite sides and projections below the rim on two other sides.

With these pots was a small fragment of excellent yellow ware, having part of a design in low relief, painted red.

Ten trial-holes were dug into Mound L. A much-decayed skeleton of an infant was met with about 2 feet below the surface.

Mound M, five trial-holes.

Mound N, ten trial-holes.

Mound O, nine trial-holes.

In the level ground five trial-holes were dug at each of the following sites:

Ridge ESE. of mound J.

Ground adjacent to the S.W. corner of Mound C.

Dwelling-site about 40 feet NNE. of Mound D.

Dwelling-site about 100 feet from W. side of Mound J.

Field W. of Mound J.

Field E. of Mound J.

Ground NE. of Mound N.

Field W. of Mound O.

Dwelling-site NE. of Mound C (across the road).

Throughout the digging, sherds were rarely met with. Such as were found in the trial-holes, and those encountered on the surface, were mainly of common ware, though a few, including one we have already described, were of excellent material—one fragment of black ware having an especially high polish on both sides.

Decoration, when present, almost invariably consisted of simple designs rudely incised. Decoration with red paint was several times found. Two specimens tested by Dr. H. F. Keller showed the pigment to be red oxide of iron.

On the surface were a small chisel wrought from a pebble of chert, and a disc

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of pottery which had been given its form before baking and had not been cut from a fragment of an earthenware vessel.

From the trial-holes came musselshells which have been identified by Dr. H. A. Pilsbry as *Quadrula perplicata; Q. heros; Lampsilis anodontoides.*

We are at a loss to account for our limited success in finding burials and artifacts in the neighborhood of the Blum mounds. We know that domiciliary mounds, such as those forming this group probably were, are often without burials in their summit plateaus, but one would expect to find cemeteries in the surrounding level ground. Did such cemeteries still exist in the neighborhood of the mounds, it is curious we failed to find them—for it is rarely one digs to any extent among skeletons, wholly or in part extended, without encountering some of them.

If cemeteries underlie the cultivated fields (and practically all the territory near the mounds has been under cultivation for a long time) one would look for numerous accounts of the finding of bones and artifacts in post-holes, in trenching, and in cultivation; but such accounts, as we have seen, are not forthcoming.

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